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REPORTS

FROM

COMMISSIONERS:

TWENTY-TWO VOLUMES.

—(21.)—

PUBLIC HEALTH; SANITARY COMMISSION.

Session

10 *December* 1868 —— 11 *August* 1869.

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PUBLIC HEALTH.

ELEVENTH REPORT

OF

THE MEDICAL OFFICER OF THE PRIVY COUNCIL.

WITH

APPENDIX.

1868.

Presented pursuant to Act of Parliament.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY,
FOR HER MAJESTY'S STATIONERY OFFICE.

1869.

TO THE LORDS OF HER MAJESTY'S MOST HONORABLE PRIVY COUNCIL.

My Lords,

In obedience to the Public Health Act, 1858, I have the honour of herewith submitting to Your Lordships, for presentation to Parliament, my Report of the proceedings which Your Lordships under that Act directed to be taken during the year 1868. And for the present purpose I treat as part of that subject-matter the proceedings which Your Lordships directed to be taken under the Vaccination Act, 1867.

I am, my Lords,
Your Lordships' obedient servant,
JOHN SIMON.

Medical Department of the Council Office,
8, Richmond Terrace, S.W.,
March 31st, 1869.

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MEDICAL OFFICER'S REPORT.

I.—Vaccination.

New Vaccination Law.

The superintendence of Public Vaccination in England occupied uring the whole of the year 1868 a more than ordinary share f the attention of the Lords of the Council. For on the first day f the year the new Vaccination Act, 30 & 31 Vict. c. 84, came nto operation; and, from then onwards, my Lords were con-tantly engaged in proceedings, such as the Legislature intended to e taken, for the improvement of our public vaccination in respects here the system had hitherto been at fault.

New regulations affecting contracts.

The nature of the defects which required correction had been ery fully explained in successive annual reports of this depart-ient, particularly in those from the second to the sixth in-usive; and as far back as 1859 my Lords had communicated to ie Poor Law Board, for the assistance of local authorities con-racting for public vaccination, an exposition of the broad prin-ples of arrangement on which contracts must in future be based the defects in question were to be prevented. In 1868, with ie new law, the time had come when this merely recommendatory node of dealing with very serious evils could no longer be con-dered sufficient; and my Lords accordingly saw fit to issue xpress regulations for the purpose, by an Order of Council bearing ate February 18th, 1868. Of the regulations thus issued, a copy subjoined to this Report, as Appendix No. 2. The great object as that public vaccination should no longer be so excessively sub-ivided among times and places and persons as to have needless ifficulties put in the way of its effective performance; and with is object the regulations provided, as their general effect, that the ublic vaccinator under ordinary circumstances should vaccinate nly at public stations, and at no station oftener than once a week, nd, if in a town district, only at one station therein; that no two ublic vaccinators should in any case act for one and the same istrict; and that the division of towns into vaccination districts ould not go beyond certain limits of smallness. Also, with refer-nce to section eight of the new Act, a special regulation was made, miting the extent to which re-vaccination at the public expense ight be given.

New contracts.

The new law did not abrogate any of the existing contracts or public vaccination, but it tended to make new contracts in nany cases desirable; and thus during the year new arrangements, which had to be conformed to the new law and to the regulations perating under it, and which my Lords had to consider in more r less detail, and for the most part very minutely, with the espective local authorities or with the Poor Law Board, were roposed by more than a seventh part of the entire number of

vaccination authorities of the country. The year has in this way been one of very great improvement in our system of public vaccination. Also in other and ordinary ways influences for improvement have been at work.

Ordinary inspections, and awards to vaccinators.

The systematic inspection which goes on under their Lordships' orders extended during the year to nearly half the public vaccination of England, namely, to 1,749 vaccination districts, comprised in 312 different unions or parishes: each inspection involving, first, an inquiry into the state of vaccination in the district; secondly, where requisite, a notification to the authority of defects found in the local arrangements for carrying the law into effect, and advice as to the changes required; and thirdly, in suitable cases, a recommendation of the vaccinator for reward under section five of the Vaccination Act, and in accordance with the system described in my ninth report. Of the money which Parliament had placed at their Lordships' disposal for this purpose my Lords distributed 2,753*l.* 2*s.* The number of vaccinators to whom gratuities were given was 345; namely, 129 who received first-class, and 216 who received second-class, gratuities. The gratuities of each class differed of course very considerably in money value in different vaccination-districts, just as the several contract-earnings differed. Where a public vaccinator was having so few vaccinations as to be only earning from his board of guardians some 20*s.* or 30*s.* a year, the supplementary payment by the Privy Council was necessarily quite insignificant as money, and, except that it implied an honorable recognition of service, might scarcely have seemed worth the trouble of formal transmission and acknowledgment; but, on the other hand, in many cases the payments were such as probably to be in themselves welcome additions to the often scanty stipends of the recipients. The largest aggregate payment of the year (a first-class gratuity on 2,738 vaccinations) was 136*l.* 18*s.*; the smallest (a first-class gratuity on 19 vaccinations) was only 19*s.*

Outbreaks of small-pox.

My Lords during the year had occasion to correspond specially with the guardians of the unions of Congleton, Enfield, Epping, Sheffield, Tendring, Tiverton, and Totnes, with regard to outbreaks of small-pox reported in those jurisdictions respectively.

Supply of vaccine lymph.

The applications made to this department during the year for vaccine lymph were 14,099; in answer to which were supplied as follows:—131,390 charged ivory points, 1,059 charged squares of glass, and 9,792 charged capillary tubes. Particulars as to the sources whence this lymph was derived are given in Appendix No. 1. Of the 14,099 applications, in answer to which lymph was given, 11,085 came from medical practitioners (including 1,462 poor-law medical officers) in England and Wales; 1,721 from Ireland, and 511 from Scotland; 566 from the army; 73 from the navy and emigration department; 101 from colonies, and 42 from diplomatic and other foreign services. My Lords, as usual, took means during the year to satisfy themselves as to the undiminished efficiency of the lymph which is supplied under their directions.

With reference to this branch of the service, my Lords had their attention drawn to a system which is in vogue in some parts of the continent, for maintaining continuous sources of lymph-supply for the human subject by keeping a succession of calves inoculated with the specific contagium; and their Lordships had a report prepared for them by Dr. Ballard on the arrangements which are in use abroad for this so-called "animal vaccination." Further information, however, is requisite before any final opinion can be formed on the question of making more or less use of the system for purposes of our National Vaccine Establishment; and therefore on the present occasion the subject cannot be written of in detail. Animal vaccination.

Fourteen of the twenty-two stations which are sources of lymph-supply for the National Vaccine Establishment, and also two stations which do not supply lymph for the public service, are used as educational stations under their Lordships' Order of December 1st, 1859. My Lords during the year inquired as usual into the conduct of the educational business of these stations, and received on this subject, as on the subject of the lymph-supply, a report which was entirely satisfactory. Educational status.

II.—General Sanitary Administration.

During 1868, as usual, in various cases within purview of the general sanitary laws of the country, my Lords had to communicate with the respective local authorities concerning action to be taken under those laws. The authorities thus communicated with were 50; including 14 of the special boards of the metropolis, 5 extra-metropolitan vestries, 15 boards under the Public Health and Local Government Acts, and 16 boards of guardians. In seven of the cases, local inquiry by an inspector under their Lordships' direction was deemed necessary, viz., at Walton-le-Dale in Lancashire, at Bootle in the same county, at Thetford in Norfolk, at Clifton-Hampden in Berkshire, at Barnet in Middlesex, at Luton in Bedfordshire, and at Dunstable in the same county. Occasional sanitary inquiries.

In the systematic sanitary inquiries which my Lords have for ten past years been carrying on, as to the distribution of disease in England and the circumstances by which it is regulated, there was in 1868 an almost complete pause; owing in some measure to the fact that the working power of the department was accidentally for the while much reduced; and in other part, because with the present commencing second decennium of sanitary responsibility, a new cycle of work had to be begun, and a great deal of consideration had to be given to questions of improvement of system. Systematic sanitary inquiries.

The department has, however, been indebted to Dr. Ballard, medical officer of health of the parish of Islington, for a very interesting voluntary contribution to knowledge, in the form of a report on the statistics of sickness treated at the public expense in Islington during the last 12 years; and this report by Dr. Ballard is subjoined. See App. No. 3. Sickness treated at public expense.

The only respect in which my Lords in 1868 extended their previous series of systematic inquiries as to the distribution and circumstances of disease, was an inquiry concerning the prevalence Venereal diseases in London.

Medical Officer's Report.

of venereal maladies among the poorer parts of the civil populatio in London; and for this inquiry Mr. Wagstaffe, one of their Lord ships' inspectors, collected some detailed information which is give in his subjoined report. See App. No. 4.

III.—Auxiliary Scientific Investigations.

Pathological investigations.

The pathological work of the department was continued during 1868 in both of the directions to which I referred in my las yearly volume; and details of this work are given by Dr. Sander son and Dr. Thudichum in their respective subjoined reports See App. Nos. 5 and 6. Dr. Sanderson, continuing from the pre vious year the very important investigation of tubercular disease has now succeeded in throwing new light upon a large part of tha subject-matter; and Dr. Thudichum, in the chemical field o research, has made considerable further progress in continuation o the line of 1867.

IV.—Additions to Sanitary Law.

Pharmacy Act, 1868.

An important addition to the sanitary law of the country was made last year by the passing of the Pharmacy Act, 1868. This statute is chiefly directed against evils to which I particularly drew attention in my sixth report, as attaching to the practice of pharmacy by unqualified persons, and to the too unrestricted procurability of poison for criminal purposes. The new law is to be worked by the Pharmaceutical Society, under the general sanction and supervision of my Lords of the Privy Council. It provides that in future no one shall begin any such pharmaceutical practice as involves a sale of poisons, unless he have first passed a sufficient examination in pharmaceutical knowledge; and that poisons shall not be purchaseable except with such personal identification as would probably hamper anyone who intended to make criminal use of them; and that the keeping and sale of poisons generally shall be subject to regulation under the Act. It also affirms an important principle in regard of the adulteration of drugs, by enacting that the provisions of the Adulteration of Food Act of 1860 shall be extended, mutatis mutandis, to the sale of drugs.

V.—Question of State Interference to provide for the Disinfection of Prostitutes.

Proposals to extend the operation of the Contagious Diseases Act, 1866.

The inquiry of the department into the prevalence of venereal diseases among the civil population was intended to contribute some of the elements necessary for judging a question which of late has been much agitated before the public: the question, *whether it is expedient to have in this country a systematic sanitary superintendence of prostitutes.* During the last few years, under the provisions of special Acts of Parliament—the so-called "Contagious Diseases Acts" of 1864 and 1866, a system of this sort has been administered on a small scale, by the War Office and Admiralty, at certain military and naval stations; and recently,

ile these departments have been proposing to extend their own erations with respect to the two public services which they ect, the more general question has been raised by the advocacy a voluntary association formed for the purpose of promoting extension of the Contagious Diseases Act, 1866, to the civil pulation of the United Kingdom.

Special case of Army and Navy, as distinguished from that of Civil Population.

There are here two questions which I think cannot be too ictly distinguished: the question concerning the army and vy, and the question concerning the civil population. It has t been any part of my duty to advise on the former of these estions; and I now only advert to it for the sake of greater arness in proceeding to discuss the other. It seems to me that ostitution and its attendant diseases, in their relation to the army d navy, are, in two different points of view, matter of public ncern and responsibility; first, because the military and naval rvices at their respective stations are essential determining causes prostitution, and the State, which for its own purposes keeps ose masses of male population unmarried, cannot claim to be indifferent to the result; and, secondly, because the specific diseases hich arise in that mode of life occasion so enormous a quantity of mporary disablement in the two services as to be of pecuniary imortance to the entire tax-paying community. These I apprehend re the grounds on which rests all that has yet been done by the egislature with reference to venereal diseases: grounds which are the utmost degree exceptional as regards the nature of the case: nd to argue from such a case to the case of the civil population ould manifestly be a confusion of judgment. Of the venereal iseases of the civil population, English sanitary law has not itherto taken any special cognizance; and whether this neutral tate of the law ought or ought not to be abandoned is a separate uestion, of far more intricacy than seems to be generally imagined, nd which on all accounts certainly deserves most careful conideration.

Requirements involved in proposal concerning civil population.

In proceeding to discuss this question, I may conveniently first efer to the programme of the association which I have menioned—the "Association for promoting the Extension of the Contagious Diseases Act, 1866, to the Civil Population of the United Kingdom." The Association contends "that sufferers nder any kind of [venereal] contagious disease are dangerous nembers of society, and should, so long as they are in this state, e prevented from communicating it to others; . . that ommon prostitutes should be subject to a compulsory medical xamination, and to compulsory detention in hospital as often s they are found diseased, and as long as they continue so; . that, for the reception of prostitutes suffering from venereal isease, hospital accommodation should be provided in all towns here such persons congregate."* To give a notion of the quantity f hospital accommodation which would be requisite to satisfy this rogramme, I may observe, for instance, that London is conjectured

* Report of Association, sections 2, 33, 32.

to have some 18,000 women whose living is gained by prostitution;* and that, according to one of the secretaries of the society, on any given number of prostitutes, always about one-third may be assumed to be diseased.† If, instead of insisting on these colossal estimates, we take only half their total result, the plan would require for London alone the creation and maintenance of new hospital accommodation nearly equal to that which is now given by the twelve general hospitals of London for all bodily diseases put together: accommodation, namely, for 3,000 patients. The charge of maintaining (independently of the cost of constructing) such lazarets as the above would probably be at least 100,000*l.* per annum: and their construction would probably represent a first cost little short of half a million of money: besides all which there would be the considerable annual charges for police arrangements and medical inspections. This for London alone! And the requirements of other large towns would probably be of like proportions.

And how, and by whom, to be met? and on what grounds?

Demands like the above are evidently not likely to be met by voluntary contributions. The result, if to be got at all, can only be got under action of law; and any such law, whether empowering the central government to defray expenses out of proceeds of general taxation, or empowering municipalities to assign local funds for the purpose, is, of course, in relation to minorities, compulsory. Now, it is quite certain that, rightly or wrongly, the proposed appropriation of money would, in the eyes of very large numbers of persons, be to the last degree odious and immoral. In most municipal constituencies there are swarms of persons who already find it no easy matter to satisfy the collectors of rates and taxes; they would see the prostitute kept in hospital at their expense for weeks or months, not necessarily from the exigencies of severe illness of her own, but essentially that she might be made clean for hire, lest any of her users should catch disease from her; they would remember in contrast, that for themselves wonderfully little is done by authority to protect them against adulterations of food, or against false weights or measures; and they might regard it as a strange caprice of law which should oblige them to contribute to the cost of giving an artificial security to their neighbour's looseness of life. It seems to me very important to measure beforehand the degree in which such arguments would be valid, or rather to consider on what principles (if any) the proposed intervention of law is to be justified.

Primâ facie, venereal diseases are not any concern of Government;

I suppose it may be assumed that public policy is very decidedly in favour of marriage as against promiscuous fornication; that the latter, however powerless may be laws to prevent it, is, at least, an order of things which no State would willingly foster; that, whereas it has some inherent inconveniences, among which is the liability to specific contagious maladies, such drawbacks from its attractions are not in their kind a matter for general social regret;

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* Appendix of Assoc. Report, p. 22.

† Mr. Curgenven, on the Contagious Diseases Act of 1866, p. 7.

that venereal diseases are, in principle, infections which a man contracts at his own option, and against which he cannot in any degree claim to be protected by action of others—the less so, of course, as his option is exercised in modes of life contrary to the common good; that thus, primâ facie, the true policy of Government is to regard the prevention of venereal diseases as matter of exclusively private concern. *Caveat emptor!* And though it must be admitted that to some extent the consequences of promiscuous fornication spread beyond the persons of the original performers; the infections of the brothel being oftentimes carried into simultaneous or subsequent wedlock, and in some cases fixing their obscene brand even on the offspring of such marriages; this horrid fact is only one of many which might be cited, where innocent wives and children participate more or less severely in consequences which husbands and fathers have earned. To be wife or child of a drunkard or a gambler involves evils against which the State does not affect to give security; and, primâ facie, the dependent interest must be equally unprotected by the State against harms which that other sort of looseness may bring on it.

but this with qualification.

I am very far from thinking that the above are the sole considerations to which regard must be had in deciding such questions as the present. But they seem to me to define a position which ought not to be abandoned, except under strong compulsion of circumstances, and with reasonable prospects of success. Evidently, if venereal diseases were now the same gigantic scourge and terror which they were some 350 years ago, when they inspired Fracastoro's poem, and if curative medicine had continued as powerless against them as then: if we saw them still raging as great intractable epidemics, impeding national movements, and forcibly occupying the mind of society with all sorts of lazarous presentations: the reasons for legislative action, *provided such action could be effectual*, might be stronger than the reasons for neutrality, and considerations as to the personal ætiology of the disease might perforce have to be subordinated to the urgency of a public danger.

Medical grounds on which the proposal has to be judged:

The cardinal questions, then, are two:—First, does the detriment which venereal infections cause to the public health reach those limits at which principles generally preferable ought to be exceptionally abandoned by the State? Secondly, would the good which can be got through State interference in this matter be enough to reasonably compensate for the cost at which it would have to be attained? I must confess that I cannot with any approach to confidence answer either of these questions affirmatively. As regards the first of them, I have not the least disposition to deny that venereal affections constitute a real and great evil for the community; though I suspect that very exaggerated opinions are current as to their diffusion and malignity; but since the resources of curative medicine against them are constantly becoming stronger and stronger, it seems probable that the worst of them will year by year become less and less important (as endangering life or limb) in cases where infection may obtain. It may also be anticipated

that the greatly improved knowledge which late years have given to the medical profession with regard to the venereal contagia will spread, and not very slowly spread, through the minds of the general public, and will soon very much reduce the number of those sad cases where infected men give syphilis to their wives and offspring. On the other hand, as regards our power of preventing venereal diseases by such a superintendence of prostitution as is proposed, it is certain that no appreciable good would be got except with much organization, and at very large cost of money; and there are strong reasons for believing that the gain so purchased would, on analysis, be found to belong very predominantly to those kinds of venereal disease in which the community has little or no permanent interest.

what is the magnitude of the mischief?

First, as regards the actual quantity of venereal disease current in this country, and the importance of such disease to the public health, it is to be remembered that under the head of "venereal diseases" are included three chief sorts of disease, and of course in each sort many different degrees of severity. The three sorts to which I refer, and which in any given person are not incompatible with one another, are gonorrhœa, pseudo-syphilis, and true syphilis. *Gonorrhœa* is never even temporarily of much importance to women, nor ever, unless very exceptionally, of much permanent importance even to men; but yet thus far it is not a quite unimportant infection, that in men it is often extremely inconvenient, indeed sometimes involves for a time painful and even disabling complications, and cannot absolutely be said never to leave permanent local damage behind it. *Pseudo-Syphilis*, or so called "simple chancre," is a form of ulcer which may be of considerable local destructiveness, and is often attended by inguinal buboes, but leads to no specific ulterior consequences. *True Syphilis*, arising as "hard chancre," or in other less characteristic primary affections, involves an outbreak or successive outbreaks of so-called "secondary symptoms;" which, though almost invariably amenable to medical treatment as they arise, and probably in an immense majority of cases not of more than transient importance to the person attacked, are yet not infrequently a more or less troublesome relapsing illness, and sometimes, even in spite of treatment, a long subsequent danger to life; and this true syphilis is of permanent interest to society, partly because of the cases (though comparatively very few) in which it is intractable in the person of the original sufferer, but still more because of the indefinite duration of time for which he or she may at intervals be capable of infecting others, and because the issue of syphilitic parents is apt to perish during utero-gestation, or to be born more or less syphilitic. In seeking to estimate, without exaggeration, the harm which society suffers from venereal diseases, and the good which preventive measures may possibly effect, it is, of course, essential to observe the distinctions between the above-described three sorts of disease: above all not to use the word "venereal" as if it were synonymous with "syphilitic;" and it is also essential that whatever purports to be statistical evidence on the subject

ıould be evidence on a sufficiently large and impartial scale. 'he report of the "Association for Promoting the Extension of ıe Contagious Diseases Act to the Civil Population" gives some tatistics which might lead to an impression that in London from ne-fifth to one-third of the sick poor are suffering from "a contagious disease of the gravest character, which is constantly transmitted from parent to offspring;" but the contents of Mr. Wagstaffe's ubjoined report (App. No. 4.) satisfy me that no sufficient grounds or any such impression exist: rendering it, I think, highly probable hat, of the sick poor who at any given moment are receiving medical relief under the poor law and at dispensaries and general hospitals n London, only about 7 per cent. have venereal disease of one kind ır another, and that only in about half this proportion the form of lisease is true syphilis. Again, a piece of the experience of the Children's Hospital in Great Ormond Street, as quoted in the report of the Association, may seem to suggest that "about one-fifth" of the sick children of the poor are sick with immediate consequences of inherited syphilis; but on inquiry I find that, of 118,590 children of the poor treated during the last ten years for all sorts of diseases at the Ormond Street Hospital, the proportion recorded to have been syphilitic has been only 1½ per 100. Thus, in both cases the quantity of evil appears to be many times less than advocates of legislative interference may imagine; and it must be remembered that London probably illustrates the utmost dimensions which the evil can attain in this country.

how far is the mischief preventable?

Then, as regards the preventability of venereal diseases, even the abstract question (abstract I mean from considerations of cost) is by no means an easy one. Especially we are in want of exact discriminative information as to the good which other countries have got from their sanitary superintendence of prostitution. I believe it to be the fact that, even under strict systems of police, prostitutes in very large proportions escape the intended supervision; and that in their evasive traffic so large a dissemination of venereal diseases may be kept up as to leave in net result very little apparent success to be boasted of. Let it be assumed, however, that, in any place where circumstances are favourable, "venereal diseases" in mass may be greatly reduced under such a system: but there remains as an unfortunate accident of the case, that this reduction might least of all affect those sorts of disease in which society is incomparably most interested; and in the absence of exact records on this point, expectations ought, I think, to be very moderate. For the various local states which most habitually spread the infection of true syphilis are apt to be in themselves such slight and painless affections as almost or entirely to escape the patient's notice; and indeed in women primary syphilitic ulcers, and other local states capable of infecting with syphilis, not only very often pass unnoticed by the patient herself, but have often been overlooked in examinations made expressly for their discovery. And with reference to proposals that particular inspections of women should take place on the information of men whom they have infected, insuperable difficulties are created in the case

of true syphilis by the very long incubation-time of the primary infection: an interval generally of at least three weeks, and capable apparently of extending to six weeks or more: during which time the inoculated part presents absolutely no sign of infection; and at the end of which time the infected man may (for obvious reasons) be in utter ambiguity as to his infectress.

and with what difficulties? and at what proportionate cost?

When the question of preventing venereal diseases is considered as one of administration and finance, some of the above facts become important difficulties. It is proposed that the organization should take equal cognizance of all sorts of venereal disease: indeed this, if the organization were in existence, would seem practically inevitable; partly because of uncertainties and precariousness of diagnosis; partly because cases, taken in the order of their permanent interest to society, would very often be in inverse order to that which the relative urgency of personal sufferings would dictate. And thus, so far as the extinction of true syphilis is to be deemed the essential object of the system, the organization would in two ways tend to be disproportionately expensive: on the one hand, because expending a very large share of its strength on diseases of no permanent importance to society, and, on the other hand, in such measure as cases of true syphilis would escape the intentions of the system.—Further, when the administrative question is considered, not as national and one, but as distributed among many local authorities, a new sort of difficulty presents itself. Whatever good can be got from a sanitary superintendence of prostitution, if worked with uniform strictness through the entire country, the good will not only of course diminish, but will diminish at an immensely increasing rate of diminution, in proportion as the system is not universal and uniformly strict; so that a local expenditure which would give remunerative results, if other places were acting on the same system, might easily, in the contrary case, appear comparatively unproductive. This has been a chief point in the case of those who have pressed for an extension of the present venereal diseases law; and the Association's report has for one of its chief texts, "Free communication between localities, fatal to success of Act in limited districts."

Practical conclusions:

The broad result in my mind from the various above-stated considerations is that at present I very decidedly refrain from recommending any change in that neutral position which English law has hitherto held in regard of the venereal diseases of the civil population. So far as my present knowledge enables me to judge, I believe that any departure from that position could do little but embarrass and disappoint.

as to compulsory legislation;

That under a well-planned national system, obligatory in its local operation, and stringently directed from the centre, with an enormous establishment of lock hospitals, with prostitution universally submitted to strict methodical supervision by police, and with very frequently recurring minute surgical examination of the persons of prostitutes, a great reduction might be made in the present prevalence of venereal diseases among the civil population; and that as part of such reduction (though probably in comparison

it a small part) there would be a diminution in the prevalence of ue syphilis; these are propositions which I do not dispute; but eir very important converse has to be remembered, that, in proortion as the above conditions cannot be attained, the hope of sults becomes chimerical. The conditions, I need hardly observe, e such as there can be no reasonable present expectation of eing realized in this country: and I must add that, in the resent state of my knowledge, I could not advocate any such gislation as would even approximately fulfil them. Not only do doubt whether the evil can in any reasonable sense be said to all for the repugnant and very costly measures of prevention hich alone could pretend to be of effect against it, but also feel bound to press for something like proportion in the treatent of such matters. And recognizing how incomplete is itherto our sanitary system, and particularly how little pressure s yet put on local authorities in matters of far more general mportance to life: recognizing, for instance, that it is almost ntirely a question of private charity whether fever hospitals xist in a town, and that such hospitals are most insufficiently rovided: I cannot but think that during this state of things ompulsory legislation in the present matter would be a dispropportion not to be justified.

as to giving option to local authorities;

On the other hand I have to observe that the somewhat uncertain amount of good which very strict compulsory legisation might produce would less and less admit of being ealized, in proportion as the provisions of law were non-compulsory: and a law, giving to local authorities or populations ny considerable scope for option in the present matter would quite unquestionably be futile. Everyone knows how valueless such legislation has been in the greater part of the hitherto province of sanitary law, even as regards objects of foremost necessity to the public health; so valueless, that in all chief respects compulsory legislation has already had to be substituted for it; and the light of those experiences may be applied, mutatis mutandis, to the present extremely difficult and delicate subject matter. There probably would be detailed discussions, often indefinitely prolonged, and resulting in inharmonious conclusions, in innumerable vestries and town-councils and wardmotes; discussions which, if not to bear fruit, ought in the interests of decency to be deprecated; but of action, capable of giving success, there certainly would be little or nothing. It is true that under permissive law there have been exceptional instances of local exertion for other sanitary purposes; but even solitary instances of such exertion could not in the present matter be anticipated; for here the peculiar discouragement would exist, that no town could be sure of satisfactory results from its own superintendence of prostitution unless other towns, in communication with it, were acting upon the same system.

as to legislating for a voluntary system;

In a particular proposal, which I think it my duty to mention, permissive legislation, of a sort which would almost entirely rest on a system of voluntary contributions, has been contemplated;

and this proposal was received last year with some favour by the Committee of the House of Lords which had the Contagious Diseases Act under consideration.* The proposal, viewed in relation to its professed aim, is of course open in the very utmost degree to the objections which I have just stated generally against permissive legislation; indeed, I can scarcely conceive that, if enacted, it would in any single case be of good effect; and there is a different point of view in which I would venture to submit that its admissibility (as well as that of any permissive legislation) requires to be most cautiously considered. For it seems to me that the proposed legislation, powerless though it would be for any sanitary result, would in principle be the thin end of a wedge; that the question of its acceptance or rejection is, as precedent, of fundamental importance; that, between permissive general legislation to-day and compulsory general legislation to-morrow, there would stand but the question of expense. In courses called tentative it is so easy to drift into positions which become pledges, that I venture to press this consideration. Whether the venereal diseases of the civil population are henceforth to be deemed matter of public concern, whether the civil fornicant may reasonably look to constituted authorities to protect him in his commerce with prostitutes, is the principle which I conceive to be at stake. And I would repeat my opinion that, if that principle is affirmed, the responsibilities implied in it cannot be adequately met without stringent compulsory general legislation.

as to local Acts.

Whether particular municipalities wishing to exercise within their respective jurisdictions special powers in relation to venereal diseases might properly be let acquire such powers by purely local Acts of Parliament, is, I think, a somewhat different question; and possibly such special Acts (provided they contained proper obligatory provisions) might, in certain cases, be conceded without any sacrifice of the real principles which are at stake. Every such case would then have to be judged on its own merits. But as regards any general legislation, whether compulsory or permissive, in regard to the venereal diseases of the civil community, my conclusion is very decided that at present I cannot recommend any such legislation.

Supplementary remarks:

Finally, there are some incidental considerations to which I beg leave briefly to advert.

Prostitution, and the ways of reducing it:

Among arguments put forward to recommend a general superintendence of prostitution, there is one which seems to have gained for the proposal a considerable quantity of non-medical, particularly clerical, support. The report of the Association namely, alleges "that a collateral but not unimportant result

* I describe the financial basis of this proposal as "almost entirely" voluntary contribution. The proposal, as I understand it, is that Government should be authorized to confer the requisite police powers for sanitary superintendence of prostitution on any local authority shown to have at command (as by voluntary contributions) the proper hospital accommodation for such purposes. And the proposal seems to assume that, if lock hospitals were established by voluntary contribution, the local authority could provide (presumably from proceeds of rates) for the cost of the medical inspections and police arrangements.

hich inevitably follows the establishment of preventive mea- ures is the improvement in the moral and social condition of ie women;" and a memorial which was last year addressed) the then Lord President of the Council, by the President of ie Royal College of Physicians and others, supported the view that, of the unfortunate women who are subjected to these strictive and sanitary measures, a comparatively large propor- on have been reclaimed." I believe it to be unquestionable iat such women as have hitherto come under medical inspection ave generally been influenced by it to become cleanlier in their ersons, and that the brothels inspected by police are less apt than hey were to be scenes of riotous disorder; changes, on which no loubt the users of those persons and places may congratulate hemselves; but which cannot without extreme abuse of terms be lescribed as of any moral significance. On the other hand, the last lause of the statement cannot fail to seem morally important to nyone who accepts it without reserve. I fear, however, that such iopes as it at first sight would seem to justify, as to possible moral esults of a government superintendence of prostitution, would on iny large scale show themselves essentially delusive; not, perhaps, as egards individual reclamations to be effected, even from brothels, by ure and kindly human contact, but as regards the statistics of pro- stitution, broadly and practically considered. For I apprehend that the concubinage-market, like other markets, tends to be fed accord- ing to demand; and that, if prostitution is really to be diminished, the principles of those who would diminish it must be preventive. Of the many roots of the evil some are practically immutable, but others will undoubtedly vary with the general moral senti- ments of the time. Always, of course, there are certain large quantities of mere brute passion, forcing at any price to have their way; and always, in our present social state, there are large unin- telligent masses of human life with little sense of right and wrong, and much of abject poverty ready to sell itself for food, and even more of uneducated frivolous temperament. But if these be regarded as in my present sense "fixed" elements (though indeed all of them are happily susceptible of reduction) a comparatively very variable force is represented in the influence of public opinion. That parents of the educated classes regard with immeasurably different degrees of interest the chastity of their daughters, on the one hand, and the continence of their sons, or future sons-in-laws, on the other, is a fact which probably has its basis in a doctrine of supposed general consequences; but knowledge which is supplied in studying the venereal diseases of the civil population—a know- ledge of the mischief and misery which a young man's transient incontinence may be preparing for his whole future domestic life, certainly gives room for consideration whether these ingredients of the one case ought not to be more popularly understood. The only state of things which can be regarded as essentially antago- nistic to prostitution is the system of early marriages: which, in this respect, commends itself equally on moral and physical grounds; for, in proportion as it is accepted, the promiscuous intercourse of

the sexes ceases to excuse itself by circumstances, and the chances of venereal infection fall to the lowest level they can attain.

Hospitals for diseased prostitutes.

Also in conclusion I would beg leave (though perhaps superfluously) to protect parts of my above argument from misapprehension. In the proposals which I have had to criticise, hospitals for diseased prostitutes have not come under discussion as charitable institutions, but solely as elements in a machinery proposed to be constituted by law for giving an artificial security to promiscuous fornication. In the latter sense I may have seemed indifferent to their existence; but in the other sense, if this occasion permitted, I would willingly plead in their favour. For some thirty-five years of hospital-surgery in London have given me the amplest opportunities of knowing what physical miseries (as well as what worse mental states) attach to the career of prostitutes; and in this point of view I cordially agree with those persons who deplore the extreme insufficiency of hospital accommodation provided among us for prostitutes venereally diseased. The defect may not be for legal remedy, but not the less it is real, and I sincerely hope it may be dealt with by agencies appropriate to its nature. Such are not for me here to discuss. But considering how large a proportion of society has responsibilities of causation or connivance in that sphere of suffering and shame, and considering again what case for compassion even those who are purest from such responsibilities may recognize in states of human life so estranged and so bitterly punished, I should suppose that dictates of justice on the one side, and impulses of charity on the other, would respond, and not parsimoniously, to any well-considered appeal in the matter.

VI.—Question of consolidating and bringing into System the Laws and Administrative Agencies which concern the Public Health.

I have stated that during the past year much consideration has had to be given in this department to *questions of improvement of system* in the laws and legally constituted machinery which purport to provide for the public health of the country: and it may be convenient that in this place I briefly state my experience of the present system, and my opinion of the reforms which are wanted in it.

Spirit of the present sanitary laws.

It would, I think, be difficult to over-estimate, in one most important point of view, the progress which during the last few years has been made in sanitary legislation. The principles now affirmed in our statute-book are such as, if carried into full effect would soon reduce to quite insignificant amount our present very large proportions of preventable disease. It is the almost completely expressed intention of our law that all such states of property and all such modes of personal action or inaction as may be of danger to the public health should be brought within scope of summary procedure and prevention. Large powers have been given to local authorities, and obligation expressly imposed o

hem, as regards their respective districts, to suppress all kinds of nuisance, and to provide all such works and establishments as the public health primarily requires; while auxiliary powers have been given, for more or less optional exercise, in matters deemed of less han primary importance to health; as for baths and wash-houses, common lodging-houses, labourers' lodging-houses, recreation grounds, disinfection-places, hospitals, dead-houses, burial-grounds, &c. And in the interests of health the State has not only, as above, limited the freedom of persons and property in certain common respects: it has also intervened in many special relations. It has interfered between parent and child, not only in imposing limitation on industrial uses of children, but also to the extent of requiring that children shall not be left unvaccinated. It has interfered between employer and employed, to the extent of insisting, in the interests of the latter, that certain sanitary claims shall be fulfilled in all places of industrial occupation. It has interfered between vendor and purchaser; has put restrictions on the sale and purchase of poisons, has prohibited in certain cases certain commercial supplies of water, and has made it a public offence to sell adulterated food or drink or medicine, or to offer for sale any meat unfit for human food. Its care for the treatment of disease has not been unconditionally limited to treating at the public expense such sickness as may accompany destitution: it has provided that in any sort of epidemic emergency organized medical assistance, not peculiarly for paupers, may be required of local authorities; and in the same spirit it requires that vaccination at the public cost shall be given gratuitously to every claimant. The above survey might easily be extended by referring to statutes which are only of partial or indirect or subordinate interest to human health; but, such as it is, it shows beyond question that the Legislature regards the health of the people as an interest not less national than personal, and has intended to guard it with all practicable securities against trespasses, casualties, neglects and frauds.

The intentions frustrated in detail:

If, however, we turn from contemplating the intentions of the Legislature to consider the degree in which they are realized, the contrast is curiously great. Not only have permissive enactments remained for the most part unapplied in places where their application has been desirable: not only have various optional constructions and organizations which would have conduced to physical well-being, and which such enactments were designed to facilitate, remained in an immense majority of cases unbegun; but even nuisances which the law imperatively declares intolerable have, on an enormous scale, been suffered to continue; while diseases which mainly represent the inoperativeness of nuisance-law have still been occasioning, I believe, fully a fourth part of the entire mortality of the country. And when inquiry is made into the meaning of this strange unprogressiveness in reforms intended and in great part commanded by the Legislature, the explanation is not far to seek. Its essence is in the form, or perhaps I may rather say the formlessness, of the law. No doubt there are here and there other faults. But the essential fault is that laws which

ought to be in the utmost possible degree simple, coherent and intelligible, are often, in nearly the utmost possible degree, complex, disjointed and obscure. Authorities and persons wishing to give them effect may often find almost insuperable difficulties in their way; and authorities and persons with contrary disposition can scarcely fail to find excuse or impunity for any amount of malfeasance or evasion.

and how?

The many mere ambiguities and minor oversights of the law need not here be insisted on; for the broad jurisdictional state of the case is in itself enough to account for miscarriage.

Local authorities: in common health-areas:

Except where special health-areas have been constituted under local Acts of Parliament, or under the Public Health and Local Government Acts, the local administration of the nuisance-law in regard of its most rudimentary objects is not vested in one single authority for each place, but is distributed, with very disputable demarcation-line, between two. And as regards the distribution of voluntary improvement-powers in such places, there may be one authority for common lodging-houses, another for labouring classes lodging-houses, another for baths and wash-houses, another for burials; and all these authorities separate from the two authorities which have to do with nuisances and drainage and water supply, and from the authority which has to do with highways.

in special health-areas.

It is true that, where special health-areas exist, matters are on a better footing as regards the consolidation of nuisance-powers and improvement-powers in the hands of the town-council, improvement commission or local board: but just in these cases a new kind of evil crops up: for, except by accidental coincidence, these special health-areas do not form units of area in the population-statistics of the country: and it consequently very often occurs that these districts (which peculiarly might be expected to be able to show an intelligible balance-sheet in regard of their expenditure of life) have really no separate statistics even of their births and deaths. Also these special health-areas have not, except sometimes accidentally, any relation whatever to the areas of poor-law relief; and a medical officer of health acting for the health-authority of the town has no official relations with the medical attendants of the sick poor.

Central authorities.

Then (secondly) as regards central jurisdiction in nuisance-law and kindred matters, the conditions are equally unmethodical. Proceedings which stand to one another in the relation of first and second stages of legal intention are the responsibilities of two different chief ministries: on the one hand, inspectional and admonitory proceedings, such as my Lords of the Council direct through this department, in relation to local excesses of disease, and their causes; and, on the other hand, coercive proceedings, which the Secretary of State is empowered to take, in regard of defaulting nuisance-authorities: proceedings of the latter sort being hardly conceivable except on foundation of proceedings of the former sort. This of course is no insuperable difficulty; for the departments concerned can easily adjust their boundary line; but unfortunately in our sanitary code there are other and less superable wants of method. The essential responsibility

or superintending the state of the public health is integrally vested in the Lords of the Council; but fragments of co-ordinate responsibility in the same subject-matter are also vested (for purposes more or less special) in the Home Secretary and in the Board of Trade; and thus one given subject-matter may be under consideration in two or even three Government offices, and each of these offices be required to communicate with the public concerning it.

Relations of Government to localities.

Thirdly, as regards the relations between central and local authorities, a very unfortunate state of things is represented in the absence of certain lines of communication. Government is supposed to supervise the state of the public health: but Government may remain for long periods of time uninformed even of extremely important local outbreaks of disease. This is constantly happening with regard to typhoid fever and other nuisance-diseases of the country; and a very suggestive illustration of the fact is, that, when diphtheria was first beginning to re-appear on a large scale in this country after an interval during which the medical profession had lost all memory of it, very fatal local epidemics of what seemed a new disease were going on for two years (1855–7) in various parts of England, with the central authority of the country absolutely unapprised of the fact. In this connexion too it deserves notice, both as a matter affecting the relations of central to local jurisdictions, and indeed also as affecting the efficiency of the local authorities themselves, that, with regard to some essential elements for proper judgment as to the health of districts, the law does not even provide for the knowledge being systematically in existence. It provides, no doubt, that causes of death shall be registered; but no provision is made that the causes shall have been medically certified; and to my knowledge it has happened in regard of whole counties that, through the general absence of proper medical certificates, with the accompanying misuse of medical language by lay certifiers of death, very deceptive impressions have been given as to the local prevalence of particular diseases. A similar fault of system is shewn in the fact that no available medical returns are made of sickness locally treated at the public expense. Nor, I need hardly add, are any such returns made as to the sickness treated by our innumerable quasi-public medical charities.

Causes of the chaotic state of law.

It would be useless, though not difficult, to explain in detail how the above-described unsatisfactory state of law has come to exist. Broadly it represents two sets of causes. On the one hand, the legislature in all these matters has evidently meant to proceed very cautiously and tentatively; and the many successive stages of attempt, while co-apparent in the statute-book, show of course a good deal of awkward piecing and overlapping, and probably more or less of accidental inconsistency, as well as a certain quantity of ground not yet covered by legislation. On the other hand, the impulses to legislation have come from many different quarters, including two or three departments of Government; and simplifications and coherency of result, such as might have been attained if all had originated from or converged to a single chief ministry for

the subject-matter, are merits which, from the nature of the case, could not be expected.

Remedial legislation.

I venture to submit for consideration whether now the time has not come when a better state of things than I have described can be, and ought to be, constructed. For in regard of some very considerable parts of sanitary legislation, including the machinery by which effect is to be given to the law, the purposes of tentative proceeding have now, I apprehend, been amply fulfilled; and there exists undoubtedly a very urgent public need, that the intentions of the legislature in the present most important subject-matter should as soon as possible, and as completely as possible, be embodied, intelligibly and harmoniously, in clear consolidating law. In contribution to this result I avail myself here of the opportunity to submit some suggestions as to what, in my opinion, are the chief objects for endeavour, and what the broad outlines of such system as might easily be attained, for sanitary government in England.

Nuisance law:

A. That the nuisance-law of England (using the word *nuisance* in its largest sanitary sense) should be put on a satisfactory footing, as regards authorities and areas of jurisdiction, seems to me the first object to be aimed at; and the opportunity would probably be found convenient for making also some extensions which are wanted as regards the scope or object-matter of the present law. Of the chief objects which I think desirable under these heads, the following is a more particular statement:—

to be consolidated with local improvement law:

a. I think it essential that the separation which recent Sewage Utilization Acts have established between nuisance-authorities and sewer-authorities should cease; that every nuisance-authority should also be sewer-authority in the fullest sense of the word: that in the hands of this consolidated health-authority should also be vested all such powers as now attach to several different authorities and corporations for purposes of local improvements and inspections in the physical interests of the people, in regard of burial grounds, baths and wash-houses, labourers' dwellings, common lodging-houses, recreation-grounds, paving, lighting, &c.

jurisdiction in special health-areas:

b. That cities and towns with developed municipal government should constitute special health-areas, having as health-authorities their respective town-councils, improvement commissioners, or other local boards, is a present state of law which of course would be continued: and the utmost facilities ought also, in my opinion, to be given (akin to those which the Local Government Act now gives) for the creation of new special health-areas, and for the variation of existing special boundaries, where required by local conditions. It seems probable that ports and harbours, with all shipping contained in them, must at least to some extent be regarded as special health-areas, having the harbour-authority for health-authority; and, if so, that, for cases where it would be convenient, the harbour-authority might be empowered to appoint some permanent officer to act as health-authority in its stead.

in ports:

in common health-areas.

c. As regards places not constituted special health-areas, choice has to be made between several courses; and the one which on the whole

think has great balance of advantages in its favour is that of consistently adhering to the intentions of Mr. Lowe's Nuisance Act of 1860, by letting the common health-areas be the union-areas of poor-law jurisdiction, and identifying the common health-authorities with the common destitution-authorities of the country. The poor-law division of the country is a long-accomplished and locally well-known division, which furnishes limits to many local relations, and, not least, fixes the Registrar-General's "districts" for statistics of population and births and deaths: every union has its administrative board, presumably of the best sort which the area can be expected to give for any purpose of local government, and carefully constituted on the double basis of rate-paying suffrage and ex-officio qualification, and moreover so constituted that each parish of the union is represented in it: and this authority has its fixed meeting-place and meeting-times: it has its permanent clerk, qualified in law: and it has, always acting in detail over the whole union-area, as visitors of the poor and their dwellings, a staff of other permanent officers, medical and non-medical. No approach to such organization as this exists for any other purpose in the rural districts of the country; and it would seem to me a simpler and safer course to bring the common health-service of the country within scope of that existing organization than to attempt a differently planned organization for objects exclusively of health. Among plans which may be conceived as alternatives to the above, it might be proposed to revert to some such parochial system as that of Sir Benjamin Hall's Nuisance Act of 1855, or to develop the parochial system of Sir George Grey's Sewage Utilization Act of 1865; but any parochial system, if not to be utterly abortive, would have to provide for the constitution of boards and offices for each parish with an elaborateness which would often seem most disproportionate; and the result when obtained would be a jurisdictional system conterminous with little except the system of church-rates. Other sorts of plan might aim at establishing a system of county-boards, with some sub-scheme, perhaps of descending scale, for smaller (say, at last parochial) sub-jurisdictions; but here again the law would fail, unless it provided for the boards and officers of the sub-jurisdictions; and all this apparatus, because of its novelty, would have to be planned so minutely, as compared with the actual work to be done in each rural sub-jurisdiction, that it could scarcely not seem excessive and pedantic. And in any of these alternative plans there would be difficulty in avoiding what, if it occurred, would be matter for extreme regret, an entire dissociation of the local health-machinery from that universal system of medical attendance which exists for purposes of the poor-law.

Relation of health-authority to authority for destitution: in common health-areas:

d. If, however, the common health-areas of the country are to be the areas of poor-law unions, and the local authorities acting for destitution are to be the local authorities acting for health, there are three conditions which I think ought to be observed. First, regard being had to the great extent of most rural unions, and to various other considerations, it is peculiarly necessary that

the authority should be well empowered to act through committees, both for divisions of district and for divisions of subject-matter; and probably it would be convenient that such committees should be able to include persons not members of the original board. Secondly, regard being had to the frequency with which neighbouring districts have joint interest in questions, as particularly of drainage and the like, each authority ought to have facilities, and in certain cases obligation, to combine for particular purposes, by committee or in entirety, with other neighbouring authorities. Thirdly, I think it scarcely less than essential that any law which connects for local administration the two services of health and poor-law relief should do so in a different form to that of the law now in force. At present in all common health-areas of the country the board of guardians of the poor is the nuisance-authority; but it is so *ex officio;* and this peculiar form of law not only gives to the health-interests of the place an undue appearance of being of secondary importance, but also sometimes leads the guardians to think themselves surcharged with duties foreign to their real business. It seems to me highly desirable that, if the two administrations are to be associated, the board should be appointed, *ab initio*, expressly for the compound purpose, and should be invested by law with a new title denoting its double functions as authority for health and destitution.

In special health-areas.

e. Within almost all special health-areas of the country the health-authority is, and I must assume will for the present continue to be, distinct from the destitution-authority of the place. I accept this as fact, but I doubt if it is to be deemed an advantage. I suspect it would generally be of benefit to municipal administration if one single board, with sufficient power of acting by committee, were elected for all purposes of local government, including the relief of destitution.

Local medical services under health-law.

f. As regards certain medical services to be locally rendered in aid of health-authorities as such, I think, first, that every health-authority should be empowered to appoint a special health-officer; secondly, that wherever there is a special health-area the appointment of a special health-officer should be imperative; thirdly, that for areas where the destitution-authority is also the health-authority, the rule ought to be that, if no special health-officer is appointed, each medical officer acting under the destitution-authority should be deemed health-officer within the limits of his own medical relief district.* I think it indispensable that everywhere throughout the country there should be an officer to whom the local authorities and the public may look for those definite occasional acts of inspection and certification which an amended health-law would certainly require from time to time to be executed, and to some of which I shall hereafter refer; but it is obvious that

* For brevity, I use the word "health-officer" without qualification: but I may observe that the functions for which I am here proposing to provide universally are only such few rudimentary functions as attach to a minor health-officer, and that the question of superintendent health-officers, acting for counties or other large areas, is one on which I do not at present enter.

in many of the common health-areas of the country occasions for this sort of action would be so few that probably the services might best be paid by fees. In all important special health-areas, on the other hand, the services would be more or less continuous; but it could only be in some very few cases that the duties of the health-officer in a single health-area would represent entire occupation of his time; and therefore, for other cases, it seems to me greatly to be desired, with a view to procuring proper cultivation of the required medical accomplishments, that the special health-officer of one town should be free to be special health-officer to another; and that the two parties concerned should so avail themselves of this freedom that the special health-officer might be able to dispense with ordinary professional practice, and that the towns employing him might be able to secure a very high quality of special service.

Extension of legal definitio of "nuisance.

g. The system of summary procedure which is the essence of our modern nuisance-law (subject, of course, in certain cases to appeal to a superior court) ought in my opinion to be extended as far as practicable to all influences by which the public health is endangered, and the word "nuisance" for the purposes of the law to be applied to every such influence. Especially, it seems to me, that all such pollutions and obstructions of streams as may be of ill consequence to the public health ought to fall within the law of nuisance.

Regulation against recurrent nuisance

h. With regard to all such sorts of nuisance as are likely to be recurrent or habitual, the central authority, and with its consent local authorities, ought, I think, to be able to make regulations and to affix penalty to breaches of them.

Proceedings.

i. All proceedings under the nuisance-law might, I believe, with advantage be open indifferently to any person aggrieved, and to the local authority, and to the central authority.

Other conterminous medical responsibilities:

B. Two very important medical responsibilities, not arising under the nuisance-law, nor under the poor-law, but created by special Acts of Parliament, have at present to be discharged, the one entirely, and the other almost entirely, by the respective destitution-authorities of unions and parishes, viz., first, public vaccination, and, secondly, medical relief in epidemic emergencies.

public vaccination:

a. The authority for public vaccination is now universally the destitution-authority, which in all common health-areas is identical with the nuisance-authority, but in all special health-areas is separate from it. Under the system I am suggesting, public vaccination in the common health-areas would remain substantially unchanged; it would be one of the health-functions of the double-functioned local authority; but as regards special health-areas, it would certainly admit of question whether public vaccination ought not rather to be a function of the consolidated health-authority than a function of the authority for destitution; and I am myself disposed to think that in those areas the transfer would generally be desirable.

action under Diseases Prevention Act.

b. Exceptional medical relief in epidemic emergencies (as requirable under the Diseases Prevention Act) is so essentially a

mere temporary increase of the ordinary medical relief of the poor, that I think it ought always to be a function of the authority which administers the ordinary relief. Thus, under present poor-law, the function would everywhere attach to the destitution-authority of the place. With regard to special health-areas, where almost universally the destitution-authority and health-authority are mutually independent bodies, the law ought to take security for all necessary co-operation of the two sets of officers; and this not only when the Diseases Prevention Act is in operation, but equally as to all ordinary relations between the preventive and curative jurisdictions.

Local medical functions attributable over larger areas.

C. Beyond the purview of such laws as I have yet spoken of, very important sanitary objects yet remain to be provided for by some sort of local administration. Such are the protection of the public against sale of adulterated and damaged food, and against malpractices of water-companies, and against offences under the Pharmacy Act; proceedings as to the diseases, especially the contagious diseases, of domestic animals; provision of skilled assistance to local magistrates when crimes against life are imputed, &c. As regards all these matters, some distinctive principles are involved, making it in my opinion for various reasons inexpedient that here the local authorities should be such as have hitherto been under consideration. One immensely important group of functions under the present head is to protect the public health against various kinds of commercial wrong; and if powers for this purpose are to be strongly and impartially exercised, it would seem desirable, first, that the areas of jurisdiction should be as large as conveniently may be, and then that the empowered authorities should rather be of magisterial type than consist of boards constituted by annual popular election. Probably the magistracy of boroughs and counties, as represented in courts of quarter-session, would be the best local authority in the matter; and it might, I submit, be required of each of these courts to appoint a public analyst, with definite duties under the adulteration laws, and with reference to public supplies of water, and various like matters. It seems to me that, for all health-matters not in the hands of nuisance-authorities or destitution-authorities, an uniform constitution of authority on this magisterial basis might very conveniently be provided; bringing more or less completely into one system the local supervision of branches of trade which concern life, and the local supervision of cattle diseases, and the local supervision of lunatic asylums, and local arrangements for providing skilled evidence in aid of coroners' inquests.

On the present occasion my subject-matter consists so especially of questions of method and organization, that I must here pass without mention many points where the law seems to me in other respects to require amendment; but I may observe in passing, that many of the most important objects which I propose should be matters of quarter-sessions authority are hitherto very imperfectly provided for by law.

D. For certain cases where public health is in question, the central authority is authorized by law to issue orders and regulations which, when issued, have the force of law in relation to the local authorities addressed. And in certain other cases the right of local authorities to take particular courses of action is by law made contingent on the central authority's giving approval to such courses. What ought to be the precise extent of the discretional control to be thus exercised by central authority in local affairs is not a question which needs here be discussed; but the number of cases which statute-law cannot touch in exact terms is so great, that manifestly, if such law is to work with promptitude and ease, it must, to a greater or less extent, be supplemented by that elastic margin of what may be called law in reserve.

Central authority in regard to regulations and sanctions.

E. The ordinary administrative relations which the law supposes to exist between local authorities and central authority in relation to the public health are in substance two:

Ordinary relations between central and local authorities.

first, that the central authority watches the fluctuations of health in all the health-areas of the country respectively;

and, secondly, that, discovering from indications thus supplied the cases where health-law is not properly administered, it takes steps, which in the last resort may be coercive of local authorities, to procure proper obedience to the law.

The extent to which the law imposes definite obligations on local authorities assigns of course a limit to the central authority as regards the class of cases where its coercive interference is possible; but far beyond that limit, as well as also within it, innumerable cases present themselves, where mere information and advice from the central authority may be influences of the utmost value in determining local authorities to right measures for the public health. It is manifest that functions of this sort cannot be exercised by any central authority except in proportion as it is cognizant of local variations in the public health: proper provisions for making all such variations known to the central authority are therefore elementary necessities in that mixed system of central and local government which the law has intended to operate for sanitary purposes in England: and greatly to improve the provisions which now exist in this country for recording and reporting the deaths and sickness of the community, is, in my opinion, an object of quite fundamental importance among such improvements of method as I am considering. The chief points where I think amendment wanted for purposes of general administration are as follows:

a. With regard to the knowledge which ought to be had concerning the deaths of the population, I have three suggestions to make.

Knowledge of deaths to be made available

First, in my opinion, the law ought as far as practicable to require in every case of death that the cause of the death be medically certified. Exception, not in substance but in form, might have to be made for cases where coroners' inquests are held; *i.e.*, the verdict of any such inquest must of course be understood to include the substance of any required medical certificate. And

medical certificates:

possibly, for very exceptional circumstances, it might be desirable to provide that, in them, any magistrate's order should exonerate from the necessity of the certificate. But, subject only to such qualifications as these, it seems to me that in all cases of death a medical certificate of the cause of death ought to be required; a certificate to be obtained, where practicable, from the medical practitioner who attended the fatal illness; or, where there has been no medical attendant, or none from whom a certificate can be obtained, from the public health-officer of the district.

local distribution;

Secondly, I think it essential that the division of the country for purposes of census and registration of births and deaths should, as far as practicable, treat as separate districts or sub-districts all areas which are separately identified for purposes of health-administration. New special health-areas are constantly in course of formation under the Local Government Act, and perhaps otherwise; and I would suggest that, as soon as possible after the formation of any such special health-district, it should be created a district or sub-district for purposes of registration and census.

statistical returns.

Thirdly, I refer with admiration to the detailed numerical statement which the Registrar General issues every Tuesday on the subject of the deaths of the metropolis during the last preceding week: a statement which relates to three millions of population occupying 137 separate sub-districts, and which not only gives the gross number of deaths for each sub-district respectively, but distinguishes also for each sub-district the more important causes of death; so that persons interested in the health-administration of London are able at a glance to see, with considerable minuteness, in what parts of London each of the principal zymotic diseases has been fatal during the previous week, and what number of deaths in each sub-district each such disease has produced. If what is thus done every week for about a seventh part of the population of England could be done for the whole population, not every week, but every quarter, this quarterly publication would represent one of the most important aids which could be rendered to the health-administration of the country. The present quarterly returns of the Registrar General state what gross number of deaths has occurred in each registration-district of the country; and a few of the sub-district registrars comply with a request which the Registrar General has during some years past made to all of them for "notes" on the prevalence of particular diseases in their sub-districts. But not even an approximative opinion as to the distribution of disease in the country can be formed from these imperfect and uncertain materials; and it is not till nearly two years later that the detailed results of the registration of deaths can be gathered from the annual reports of the Registrar General. A system of quarterly death-reports for the entire country, in general conformity with the weekly death-reports which are given for London, is therefore among the amendments for which I hope.

Knowledge of sickness to be made available.

b. With regard to the knowledge which ought to be had concerning the sickness of the population, I think that, greatly for immediate purposes of medical science and health-administration, and in an even higher degree for common purposes of public

economy, certain broad information ought periodically to be given as to the quantities and kinds of sickness treated by the several destitution-authorities and by the several medical charities of the country. As regards the former, it would seem desirable that at fixed intervals (say quarterly) each destitution-authority should state in a fixed tabular form, for each of its medical relief districts, what numbers of cases of disease generally, and of a few of the more important epidemic diseases individually, had been remaining under treatment at the commencement of the period; and what numbers had been remaining at the end; and what numbers of new cases had come under treatment during the period; and what number of deaths had occurred among new cases and old cases respectively. And as regards medical charities, I venture to suggest that, in the rightly understood interests of their subscribers, no less than for other ends to which I have referred, a system of uniform registration, and an uniform contribution of annual returns, ought to be claimable from them by the central authority, in reference to the sexes, ages, numbers, and kinds of cases treated by them respectively, and to the duration and results of treatment.

Medical Officer's Report.

F. That any central offices which have to do with sanitary affairs ought, like the local authorities and jurisdictions, to be methodically related to each other and to the public, on some simple consistent plan, according to their respective subject-matters, is of course indisputable: but this section of the argument does not here require at my hands more than a few explanatory remarks. If the present central offices which are more or less concerned in the question be regarded according to their main intentions, and therefore without reference to such minor flaws and uncertainties of jurisdiction as any consolidated law would at once rectify, the following may be taken as their scheme.

Central authority.

a. The functions which my Lords of the Privy Council exercise through their Medical Officer, and for which the Medical Department of the Council Office is constituted under the Public Health Act, 1858, are the essentially sanitary functions of Government: such as the following:

Lords of the Council.

to take practical cognizance of all important faults and fluctuations of the public health, general or local; looking at each such fault or fluctuation as a question of cause and effect, and examining for the common interests whether in each suffering or endangered place everything is done which ought to be done in prevention of the beginnings or spreadings of disease; and thus and from other points of view to act in supervision of all local health-authorities as such, and to give them such advice or to adopt such other measures as the circumstances in each case may shew necessary;

to provide an office of reference and appeal for local authorities and for the people generally on all considerable sanitary influences operating in the country, and on all other public questions of causation and prevention of disease, so far as the knowledge of the time enables such questions to be answered, an office in which scientific knowledge of this sort shall be

systematically gathered and reported for public use, and in which, so far as practicable, such knowledge shall be increased from year to year by special scientific investigations;

to issue, and afterwards to superintend in operation, such orders, regulations and sanctions, as the Government with medical advice sees fit, in relation to various special matters which the Legislature has made subject to this control: as local provision against epidemics, performance of public vaccination, questions as to practice of pharmacy and sale of poisons, questions as to the medical profession, &c.

Home Office.

b. There are two offices which, by a part of their subject-matter, have close, though not extensive, relation to the Medical Department of the Council Office; two offices, namely, which both are under direction of Her Majesty's Home Secretary of State. On the one hand there is the great arithmetical office, over which the Registrar-General presides: the office to which the public looks for all numerical information obtained by periodical census and from local registers, as to the numbers, ages, sexes, birth-places, industries, and family-combinations of the people, and as to the marriages, births and deaths, which take place amongst them: and I need hardly observe that one part of this statistical information constitutes an indispensable basis for some proceedings in the Medical Department. On the other hand, there is the office through which the Secretary of State, under authority of the Local Government Act, controls the exercise of rating and borrowing powers for purposes of local improvement under the Act, and, incidentally to this control, has before him for skilled criticism the various proposals of local authorities for drainage, sewage-utilization, &c. And as this office (essentially including a staff of engineers) has been found the most convenient machinery through which the Secretary of State can advise, and in case of need enforce, in regard of localities, certain constructional improvements which may be needful for the health of the inhabitants, so, in the particular cases where necessities of this sort are in question, the action of Government may be considered as consisting of two stages: the first conducted in this department of the Council Office, and the second conducted in the local improvement office of the Home Secretary. This department then, which is essentially medical, has an important point of contact with each of those two non-medical offices: but the three subject-matters, in their main extent, are necessarily separate for administration. Whether the three offices ought still to remain as now divided under two chief ministers, or might more conveniently be all made subject to one, and, if so, to which one, are questions which of course involve many other considerations than those on which it is my province to enter. I am however permitted to state that these questions, with others relating to the distribution of central sanitary work, are at present being considered by the Ministers whose departments they specially concern.

JOHN SIMON.

APPENDIX.

No. 1.—Statistics of the National Vaccine Establishment, and Educational Vaccinating Stations.

1. Staff at end of 1868.

N.B.—The Stations named in *italics* are Educational Vaccinating Stations, authorized by the Lords of the Privy Council, for the purposes of their Lordships' Order of December 1, 1859.

	Names.	Vaccinating Stations.	Days and Hours of Attendance.
Vaccinators supplying lymph for the public service and salaried from the Parliamentary Grant.	1. Mr. John N. Tomkins, *Inspector.*	Fitzroy Street.	Daily, 10—11.
	2. Mr. J. F. Marson -	*Surrey Chapel.*	Tuesd., Thursd.; 1—2.
	3. Mr. G. L. Cooper -	Battle Bridge.	Tuesday; 12—1.
	4. Dr. R. Sharpe -	Bermondsey.	Tuesday; 10—11
	5. Mr. R. Wade -	Dean Street, Soho.	Monday; 9—11.
	6. Mr. A. B. Macann -	King Street, Portman Square.	Monday; 10—11.
	7. Mr. Wm. J. Lewis -	Spital Square.	Monday; 10—11.
	8. Mr. Wm. J. Lewis -	*Wellclose Square.*	Tuesday; 9—11.
	9. Mr. W. E. G. Pearse	*Tottenham Court Chapel.*	Mond., Wednesd.; 1-2.
Parochial and other Vaccinators not salaried from the Parliamentary Grant, but furnishing Lymph at a fixed rate of payment.	1. Mr. Ellis S. Guest -	*Manchester.*	Monday; 2—4.
	2. Dr. G. F. De la Cour	*Birmingham.*	Monday; 10—12.
	3. Dr. H.A.P.Robertson	*Bristol.*	Tuesday; 11—12.
	4. Mr. A. B. Steele - / Mr. J. H. Wilson - / Mr. John Fenton -	*Liverpool.*	Monday; 9. / Friday; 2.
	5. Dr. E. L. Webb -	*Pimlico.*	Monday; 10—12.
	6. Mr. G. C. Gilchrist -	*Newcastle-on-Tyne.*	Tuesday; 2—3.
	7. Mr. W. E. G. Pearse	*Westminster.*	Monday; 9—11.
	8. Mr. J. G. Gerrans -	*Marylebone.*	Monday; 10—11.
	9. Mr. Frederick Holmes	*Leeds.*	Tuesday; 3¼.
	10. Dr. Edward Lynes -	Coventry.	Monday; 12—2.
	11. Mr. Joseph Teale -	Salford.	Thursday; 2½.
	12. Dr. James Dunlop -	*Glasgow.*	Monday; 12—1.
	13. Mr. C. Harriot Roper	*Exeter*	Thursday; 3.
Teachers of Vaccination not supplying lymph.	1. Mr. Robt. W. Dunn	*Strand.*	Monday; 10.
	2. Dr. W. Husband -	*Edinburgh* - -	Wed., Sat.; 12.

Statistics of the National Vaccine Establishment and Educational Vaccinating Stations—*continued.*

2. SOURCES and AMOUNT of LYMPH SUPPLY in 1868.

N.B.—The Stations named in *italics* are Educational Vaccinating Stations, authorized by the Lords of the Privy Council, for the Purposes of their Lordships' Order of December 1, 1859.

—	Vaccinating Stations.	No. of Vaccinations performed at the Stations respectively.		No. of charges of Lymph supplied from the Stations respectively.	Remarks
		Primy	Revacns		
Vaccinators salaried from the Parliamentary Grant.	1. Fitzroy Street	783	—	4,750	
	2. *Surrey Chapel*	1,252	35	15,750	
	3. Battle Bridge	472	—	5,388	
	4. Bermondsey	748	39	11,078	
	5. Dean Street, Soho	491	13	8,730	
	6. King Street, Portman Square	309	5	5,845	
	7. Spital Square	307	—	9,586	
	8. *Tottenham Court Chapel*	896	20	16,218	
	9. *Wellclose Square*	305	—	9,066	
Total	9 Stations	5,563	112	86,411	
Parochial and other Vaccinators not salaried from the Parliamentary Grant, but furnishing Lymph at a fixed rate of payment.	1. *Manchester*	1,395	—	18,387	
	2. *Birmingham*	1,197	4	5,520	
	3. *Bristol*	517	—	3,812	
	4. *Liverpool*	904	—	17,643	
	5. *Pimlico*	879	8	34,524	
	6. *Newcastle-on-Tyne*	333	1	6,106	
	7. *Westminster*	782	10	16,378	
	8. *Marylebone*	670	38	4,823	
	9. *Leeds*	748	—	18,733	
	10. Coventry	721	—	847	
	11. Salford	1,131	—	7,040	
	12. *Glasgow*	1,079	—	6,601	
	13. *Exeter*	—	—	—	
Total	13 Stations	10,356	61	140,414	
General Total	22 Stations	15,919	173	226,825	

Statistics of the National Vaccine Establishment and Educational Vaccinating Stations—*continued.*

Amount of Lymph Supply.

3. Summary for the Years 1856–1868.

Year.	Total Vaccinations performed at the Stations which supply Lymph.	Re-vaccinations included in preceding Column.	Number of Charges of Lymph supplied.
1856 - -	7,039	?	210,942
1857 - -	6,327	?	213,207
1858 - -	6,445	?	234,150
1859 - -	9,030	?	237,801
1860 - -	13,849	?	228,347
1861 - -	12,009	?	225,000
1862 - -	13,149	?	211,475
1863 - -	20,600	?	239,432
1864 - -	13,727	?	203,250
1865 - -	14,648	515	219,832
1866 - -	14,319	372	207,014
1867 - -	14,911	584	216,637
1868 - -	16,092	173	226,825

No. 2.—Further Regulations by the Lords of the Council securing the efficient performance of Public Vaccination, and respect of the Re-Vaccination of persons who apply to be vaccinated, made and issued February 18th, 1868.

I.—*Places and Times for Vaccination under Contract.*

Public Vaccinator, under ordinary circumstances, to vaccinate only at public Stations;

1. Except where the Privy Council, for reasons brought to its not sees fit in regard of any particular district to sanction a system of do ciliary vaccination, every vaccination-district shall have in it at le one public station appointed for the performance of the vaccinati under contract; and where any such station has been provided fo district, no person resident within two miles thereof, and not being inmate of the workhouse, shall be vaccinated under contract elsewh than at such station, unless the vaccinator in the particular case be opinion (which, if so, he is hereby required to note in his register) th for some special reason, the person whom he purposes to vaccinate can properly be vaccinated at the station.

and not oftener than once weekly;

2. Except under special authorization from the Privy Council aforesaid, or in so far as may be expedient at times when there is imm diate danger of small-pox, vaccination under contract shall not appointed to be performed at any station oftener than once a week.

and, if in a town-district, only at one Station therein.

3. And in any future contract concerning a vaccination dist which is partly or wholly within a town, there shall not, except un special authorization as aforesaid, be appointed within the town m than a single station for the performance of the vaccinations of district.

II.—*Vaccination Districts in Towns.*

Limitation as regards Towns, on the Smallness of Districts for Vaccination.

No part of the metropolis, or of any city, or municipal borough town corporate, or other town, shall, in respect of any future contr form by itself, or with any rural place, a separate district for vaccinat except with the approval of the Privy Council, unless it contain estimated population of at least 25,000 persons, or else be as much the metropolis, city, borough, or town, as is for purposes of vaccina under the control of one board of guardians.

III.—*Office of Public Vaccinator.*

Each District to have its own Public Vaccinator.

After the expiration of the month of June next, no two or m persons shall be allowed to act severally as vaccinators under contrac any one and the same part or district of any union or parish.

IV.—*Re-Vaccination.*

Extent to which Re-Vaccination at public expense may be given.

The performance of re-vaccination by the public vaccinator on per applying to him for that purpose shall be limited in each case by following conditions: (1) that, so far as the public vaccinator can as tain, the applicant has attained the age of 15 years, or, if during immediate danger of small-pox, the age of 12 years, and has not be been successfully re-vaccinated; and (2) that, in the public vaccina judgment, the proposed re-vaccination is not for any sufficient me reason undesirable; and (3) that the public vaccinator can a vaccine lymph for the purpose without in any degree postponing claims which are made on him for the performance of primary vaccin in his district.

No. 3.—Report by Dr. Edward Ballard, Medical Officer of Health for Islington, on the Results of an Analysis of Records of Sickness kept in Islington during the 12 years 1857 to 1868 inclusive.

The 26 diagrams represent the fluctuations, week by week, of the more important elements of weather during a period of 12 years, namely from 1857 to 1868, inclusive, together with the variations in the amount of general sickness, and of certain important special forms of sickness, as obtained from records of new cases of disease admitted for treatment in certain institutions where the sick poor are treated in the parish of St. Mary, Islington. The record of weather employed in the construction of the diagrams is that published in the weekly returns of the Registrar General. The parish of Islington is one of the most rapidly increasing parishes in the metropolis. In 1851 the population amounted to 95,329 persons; in 1868 it could not be calculated at less than 200,000. This rapid increase must be taken into account by anyone comparing the diagrams of one year with those of another. The diagrams for the first three years, again, are constructed from the records of the parochial workhouse, and the infant poorhouse, together with those kept by eight medical officers attending sick paupers out of doors, and at the Holloway Dispensary. In 1860 the Islington Dispensary began to keep a record of their new cases of sickness, and from that year forward this institution is included in the diagrams. Beside the variations in the admissions of new cases of sickness generally, I have marked those of respiratory diseases (bronchitis and catarrh, pneumonia and pleurisy), of diarrhœal affections, and of the four common epidemic diseases, small pox, measles, scarlatina, and hooping cough. Diagrams 25 and 26 are of the nature of a *summary* of the twelve years, representing the average weather of each week and the average number of cases of sickness received in each week under treatment. They exhibit the average prevalence of sickness at the different seasons of the year (as deduced from the 12 years' observations), and also that of the several common affections particularized. The total number of cases tabulated for the purpose of these diagrams is as follows:—

Of general sickness -	272,469 cases.		
Of respiratory diseases -	47,889 „	= 175·7 per 1,000 of all cases.	
Of diarrhœal affections -	16,456 „	= 60·3 „	„
Of measles - -	5,501 „	= 20·1 „	„
Of hooping cough -	4,580 „	= 16·8 „	„
Of scarlatina - -	3,850 „	= 14·1 „	„
Of small pox - -	1,97 „	= 7·2 „	„

This table indicates *the order of frequency of occurrence* of these diseases in an average town population, during a period sufficiently prolonged to afford time for the occurrence of several epidemics of each, varying in their degree of severity. It is not the same order as comes out when the deaths occurring in the same period are added up. The deaths among all classes of the resident population in the parish of Islington during the same 12 years were as follows:—

		Per 1,000 of all deaths.
Deaths from all causes - - -	40,071.	
„ respiratory diseases -	7,138	= 178·1
„ scarlatina - - -	2,007	= 50·0
„ diarrhœal affections -	1,971	= 49·1
„ hooping cough - -	1,756	= 43·8
„ measles - - -	1,142	= 28·4
„ small pox - - -	475	= 11·8

The comparatively small fatality of small pox and measles, and the comparatively very high fatality of hooping cough, and especially of scarlatina, are obvious on a comparison of these two tables. Unfortunately, too, although these latter diseases do not stand high in the list of epidemic maladies for frequency of occurrence, they not only are of high immediate fatality, but by the damage they effect to the lungs and kidneys respectively, they lay the foundation for chronic affections which go ultimately to swell the catalogue of premature deaths.

General Sickness.

The total number of cases of sickness generally, observed during the 12 years, was 272,469. They were thus distributed:—

In 1857	12,796 cases.	In 1863	26,710 cases.
1858	13,836 „	1864	23,951 „
1859	15,086 „	1865	23,447 „
1860	21,842 „	1866	27,450 „
1861	23,326 „	1867	27,365 „
1862	23,929 „	1868	32,731 „

Diagrams 25, 26, exhibit the line of general sickness as it was, on the whole, distributed through the several periods of the year. The diagrams 1 to 24 exhibit the same line for each year of the twelve. It is to be observed that it forms two waves. Commencing from the 22d week in the year (the 1st week in June), when the general sickness was on the whole at its minimum, the first wave rises rapidly to attain its maximum in the 33d week (the 3d week in August); it then descends still more rapidly than it rose during the next four weeks, terminating in the 37th week (the 2d week in September), but with an amount of sickness considerably greater than that with which it commenced. This wave only occupies 15 weeks out of the 52 for its completion. The remaining 37 weeks are occupied with the second and larger wave, which quickly attains its maximum elevation in the 47th week, and thence declines gradually through the winter, and notably through the spring, until it ends in the minimum of the year again in the 22d week.

There is a fallacy to be taken into account in respect of the sickness recorded in December, especially at its close, and in that of the first week of January, which renders the amount of sickness apparently less than in all probability it actually was. I allude to the social and domestic occupations of the people at this season, culminating in the Christmas week, which very evidently deters them from the seeking of medical advice for lesser ailments, such as would at any other time have sent them to the union surgeons or dispensaries. There is observed thus a gradual diminution in the number of new cases week after week as soon as November has closed. The weekly average of new sickness in the last week of November being 470 cases, it fell week by week as follows:—

48th week	463 cases.
49th „	459 „
50th „	459 „
51st „	387 „
52nd „	321 „
1st week Jan.	426 „

Hence, instead of taking the actual returns of sickness for December s indicating the line of sickness at that period of the year, it would be ore accurate to supplant them by the mean of the sickness of Novem- er and January. Making such a correction we find that, taking the hole sickness of the year as 1,000, the cases are distributed through ie several months as follows:—

January	84·1 cases		
February	82·6 „	Winter quarter	248·5 cases.
March	81·8 „		
April	80·3 „		
May	78·4 „	Spring quarter	237·8 „
June	79·1 „		
July	85·4 „		
August	88·7 „	Summer quarter	257·7 „
September	83·6 „		
October	84·2 „		
November	86·5 „	Autumn quarter	256·0 „
December	85·3 „		
	1,000·0 cases.		1,000·0 cases.

Hence the experience of our 12 years in Islington has been on the hole that, of the several quarters of the year, the summer has been the ost sickly, the autumn rather less so, but nearly equalling it; that ext in order comes the winter quarter, and that the spring quarter has een the least sickly of all.

Of the several months of the year, the order of sickliness has been, ugust the most sickly, then November, July and December, January nd October, September, February, March, April, June, and May, the st being the most healthy month of the year.

Diagram No. 25 shows the relation borne by the line of annual sick- ess to the average meteorological conditions of the several seasons of he year. The minimum of sickness corresponds with a season at which he mean temperature of the air is just 58·7°, with a mean daily range f about 21 degrees, the mean atmospheric humidity being 76 (satura- ion 100), with an average rainfall of 0·82 inches, distributed over etween two and three days in the week. From this point it is observable hat the sickness rises as the warmth of the air rises and the daily range f temperature increases towards the summer months, these conditions eing associated with lessened rainfall and greater dryness of the air. But it is further to be noticed, that the summit of the summer wave of ickness is not attained until some four or five weeks after the maximum emperature of the year has been reached, and until a time when the ummer heat is in course of subsidence, the daily range lessening and he rainfall and atmospheric moisture becoming greater. The end of he summer wave (the minimum of summer sickness) corresponds with time when the mean temperature is the same as at the spring minimum f sickness, viz. 58·7°, the daily range of temperature being about 6 degrees, the atmospheric humidity about 78, with a rainfall of 0·50 inch istributed over between two and three days in the week. Comparing he smaller spring minimum with the greater summer minimum of ickness, we may observe that while the mean temperature is about the ame at the two periods, the former corresponds with a greater daily ange, more rainfall, and rather less atmospheric humidity than the tter. So much for the summer wave.

The greater wave of sickness, which is to occupy the autumn, winter,

and part of the spring, begins to rise as the mean temperature of the year sinks below 58·7°, as the daily range continues to lessen, and as, with these conditions, the atmospheric humidity increases above 78. The maximum sickness is, as has been observed, quickly attained; the summit of the wave corresponds to a temperature of 41·2°, with a daily range of about 11 degrees, and a relative atmospheric humidity of 88. This wave subsides (unlike the summer wave) very gradually indeed; it is not peaked like the summer wave, but has a broad summit, very little subsidence occurring until the seventh week of the winter quarter. Still, during these weeks, from the 47th week of the year onwards, a slight subsidence is observed, corresponding to the slight increase of temperature and the slow reduction in the humidity of the atmosphere which takes place in the last few weeks of December and the beginning of the year. The imperfection of the records of sickness (before alluded to) in the last weeks of December and the first week of January interferes with the determination of the influence of the greatest cold in the first week of the year. However, it is clear that the gradual reduction in the general sickness, and most marked subsidence of the large wave, follow almost immediately upon a rise of the mean temperature above 40°, with diminution of the humidity of the air below 84; and that they continue as the temperature of the year increases, the daily range becomes greater, and the atmospheric humidity less and less.

In looking at the diagrams one is struck forcibly with the facts, 1°, of the excessive sickliness of the year 1863; 2°, of that of the cholera year 1866, from the month of February onwards, not merely of the summer quarter, which would be explicable from the existence of the epidemic; and, 3°, of the continued extraordinary sickliness of the two years succeeding the cholera epidemic, a sickliness not confined to any one quarter, but extending to all the seasons. There is nothing in common in the ordinary meteorological circumstances of these four years to account for these facts. 1863 and 1868 agreed to a certain extent, in having on the whole a high temperature and in being comparatively dry, but 1866 and 1867 were comparatively cool and wet. 1863 was in all respects a remarkable year as regards sickness; for not only was the general sickness high, but it was the year of the grand outburst of small-pox, as well as of a serious epidemic of scarlatina, hooping cough being also unusually prevalent. The year 1866 was notorious not only for the cholera outbreak, but also for a severe epidemic of measles and a renewal of the small-pox epidemic. The year 1867 was remarkable also for the great prevalence of small-pox and scarlatina, and 1868 for scarlatina, measles, and hooping cough. The high sickliness of the year 1863 is in great measure explicable by the wide-spread distress arising out of the cotton famine, and 1867 and 1868 were years of greatly depressed trade, and in addition 1868 was a year in which the price of provisions was exceedingly high.

The order of sickliness of the several quarters and months, as deduced from a general view of my experience of the past 12 years, was not, of course, observed every year. During the 12 years—

Summer stood highest in the order of sickliness 6 times.

„	„	second	„	„	4	„
„	„	third	„	„	1	„
„	„	fourth	„	„	1	„
Autumn	„	highest	„	„	3	„
„	„	second	„	„	3	„
„	„	third	„	„	4	„
„	„	fourth	„	„	2	„

Winter	stood	highest	in the order of sickliness	twice.	
,,	,,	second	,, ,,	5	times.
,,	,,	third	,, ,,	2	,,
,,	,,	fourth	,, ,,	3	,,
Spring	,,	highest	,, ,,	1	,,
,,	,,	second	,, ,,	1	,,
,,	,,	third	,, ,,	4	,,
,,	,,	fourth	,, ,,	6	,,

The most uniformly sickly quarter, then, has been the summer, and the most uniformly healthy quarter has been spring. Autumn would probably come out more uniformly high in sickliness, but for the fallacy introduced by its embracing the month of December.

The meteorological conditions which appear to exercise the most decided influence upon the quantity of general sickness are atmospheric temperature and humidity and rainfall. Table I. is constructed with a view to show what these conditions were in the quarters of greater and less sickliness. I have also introduced columns showing the average cost of provisions in each quarter, and the average amount of pauperism. I have excluded the years 1863, 1867, and 1868, as calculated to disturb the general result. (See Table I., pp. 42, 43.)

From this table it appears, 1st. That the mean temperature of the most sickly quarters, whether winter, spring, summer, or autumn, was on the whole higher than that of the less sickly quarters. This difference is most obvious in the winter quarter, next in the summer quarter, and least in the spring quarter.

2d. That in the winter and spring the mean humidity of the atmosphere was on the whole less in the more sickly quarters than in the less sickly. In the summer and autumn quarters this difference is not remarkable.

3d. That the rainfall (including snow) was greater in the more sickly than in the more healthy winters. In the summers there was scarcely any difference in the mean rainfall of the sickly and more healthy quarters. In the spring and autumn the more healthy quarters were remarkable on the whole for a greater rainfall than the more sickly ones.

4th. That rain fell more frequently in the more sickly winters and summers than in the more healthy ones, but much less frequently in the more sickly than in the more healthy spring quarters.

On the whole it would appear that atmospheric temperature is the most important of the meteorological conditions mentioned, which influence the amount of general sickness. That in the winter a comparatively high temperature with atmospheric dryness, and much and frequent rain or snow, is calculated to render the season unhealthy; and conversely, that cold weather, with a moister atmosphere, and comparatively little rain and snow, is calculated to render the season healthy. That in the spring a moist atmosphere, with frequent and abundant rain, together with comparative lowness of temperature, is calculated to impart a healthy character to the season, while warmer and drier springs are on the whole less healthy. That in the summer season the healthiness or unhealthiness depend almost wholly upon the temperature. Lastly, that the healthiness or unhealthiness of the autumn also depends more upon its temperature than upon any other meteorological condition.

The exceptional year 1863, each quarter of which was unusually sickly, was remarkable for the comparatively high temperature of the winter and autumn quarters, and the atmospheric dryness of the whole year.

TABLE I.

WINTER QUARTERS.

Of greater Prevalence of Sickness.

Years.	New Cases of Sickness.	Mean Temperature.	Mean Humidity.	Rain in Inches.	Rainy Days.	Price of Wheat.	Price of Beef.	Price of Mutton.	Pauperism.
		°				s. d.	d.	d.	
1859	4,004	43·3	83	2·55	33	40 8	5 3/4	5 7/8	865,818
1860	6,640	38·9	82	3·80	52	44 5	5 1/8	5 3/4	835,787
1862	6,118	40·6	86	5·73	43	60 1	5 1/8	5 3/8	948,198
1864	6,174	38·2	82	4·27	37	40 4	5 1/8	6 1/4	995,334
1866	6,599	41·2	83	9·55	51	45 6	5 3/8	6 3/8	898,948
Mean-	5,907	40·4	83	5·18	43·2	46 2	5 3/8	6	908,817

Of less Prevalence of Sickness.

Years.	New Cases of Sickness.	Mean Temperature.	Mean Humidity.	Rain in Inches.	Rainy Days.	Price of Wheat.	Price of Beef.	Price of Mutton.	Pauperism.
		°				s. d.	d.	d.	
1857	3,167	36·3	85	3·79	35	56 10	5 3/4	6 1/4	912,547
1858	2,998	37·9	81	3·41	20	46 5	5 1/4	5 7/8	974,017
1861	5,689	39·7	89	4·96	40	55 1	6	7 1/4	889,942
1865	5,780	36·6	82	5·94	45	38 4	5 3/4	6 1/4	955,700
Mean-	4,408	37·6	84	4·52	35·0	49 2	5 3/4	6 3/8	933,051

SPRING QUARTERS.

Of greater Prevalence of Sickness.

Years.	New Cases of Sickness.	Mean Temperature.	Mean Humidity.	Rain in Inches.	Rainy Days.	Price of Wheat.	Price of Beef.	Price of Mutton.	Pauperism.
		°				s. d.	d.	d.	
1859	3,599	54·2	77	6·40	29	47 3	5 5/8	5 7/8	819,560
1861	5,619	51·6	81	4·73	30	54 9	5 1/2	6 1/4	831,587
1864	5,916	53·5	73	3·48	22	39 7	5 1/4	6 3/8	908,542
1865	5,937	56·3	72	7·24	24	40 6	5 7/8	7 3/8	901,862
1866	6,411	52·9	75	8·00	35	46 6	5 7/8	7	857,796
Mean-	5,476	53·7	76	5·97	28·0	45 8	5 1/2	6 1/2	863,869

Of less Prevalence of Sickness.

Years.	New Cases of Sickness.	Mean Temperature.	Mean Humidity.	Rain in Inches.	Rainy Days.	Price of Wheat.	Price of Beef.	Price of Mutton.	Pauperism.
		°				s. d.	d.	d.	
1857	2,889	54·3	76	4·06	31	56 9	5 5/8	5 3/4	851,525
1858	3,287	54·7	72	5·07	30	44 1	5 1/2	5 1/2	871,512
1860	5,112	50·5	80	10·36	49	52 8	5 3/4	6 1/2	799,434
1862	5,552	53·1	82	7·61	46	56 8	5	6	909,721
Mean-	4,210	53·1	77	6·77	39	52 6	5 1/4	5 3/4	858,048

Table I.—*continued.*

Summer Quarters.

Of greater Prevalence of Sickness.

Years.	New Cases of Sickness.	Mean Temperature.	Mean Humidity.	Rain in Inches.	Rainy Days.	Price of Wheat.	Price of Beef.	Price of Mutton.	Pauperism.
		°				*s.* *d.*	*d.*	*d.*	
1857	3,610	63·3	77	5·73	30	59 11	$5\frac{3}{8}$	$5\frac{3}{4}$	812,015
1859	4,133	62·8	73	7·10	33	44 0	$5\frac{1}{4}$	$5\frac{3}{8}$	783,449
1861	6,269	60·4	78	4·20	43	52 1	$5\frac{1}{2}$	$5\frac{1}{4}$	805,581
1866	7,841	58·7	80	7·93	45	51 0	$6\frac{1}{8}$	$6\frac{3}{4}$	838,508
Mean-	5,463	61·3	77	6·24	37·7	51 9	$5\frac{1}{2}$	6	809,888

Of less Prevalence of Sickness.

Years.	New Cases of Sickness.	Mean Temperature.	Mean Humidity.	Rain in Inches.	Rainy Days.	Price of Wheat.	Price of Beef.	Price of Mutton.	Pauperism.
		°				*s.* *d.*	*d.*	*d.*	
1858	3,514	61·0	74	5·39	29	44 7	$5\frac{1}{4}$	$5\frac{1}{2}$	812,498
1860	4,785	56·3	85	9·12	52	59 1	$5\frac{5}{8}$	$6\frac{1}{4}$	769,360
1862	3,838	60·2	81	5·75	33	56 10	$5\frac{1}{2}$	$6\frac{1}{4}$	909,506
1864	5,932	59·4	71	4·37	24	42 3	$5\frac{1}{2}$	$6\frac{1}{4}$	855,039
1865	5,907	62·5	75	6·41	29	43 3	$5\frac{3}{4}$	$7\frac{1}{2}$	836,761
Mean-	5,195	59·9	77	6·20	33·4	49 2	$5\frac{1}{2}$	$6\frac{1}{4}$	836,632

Autumn Quarters.

1858	4,037	43·5	87	3·11	31	41 9	$5\frac{1}{4}$	$5\frac{1}{2}$	826,655
1861	5,749	46·4	88	7·23	35	59 3	$5\frac{1}{2}$	$5\frac{3}{4}$	844,429
1862	6,421	45·6	89	7·04	40	48 2	$5\frac{1}{2}$	6	1,040,156
1866	6,599	46·5	87	5·36	41	56 8	$5\frac{7}{8}$	$6\frac{3}{8}$	868,291
Mean-	5,701	45·5	88	5·68	36·7	51 5	$5\frac{1}{4}$	$5\frac{7}{8}$	894,882

1857	3,130	47·4	92	5·56	23	52 0	$5\frac{3}{8}$	$5\frac{3}{4}$	859,756
1860	5,305	42·8	89	4·59	35	56 9	$4\frac{7}{8}$	$5\frac{1}{4}$	788,838
1859	3,350	43·0	87	7·18	48	43 4	$5\frac{1}{4}$	$5\frac{3}{4}$	793,391
1864	5,929	43·6	82	4·13	29	38 5	$5\frac{5}{8}$	$6\frac{1}{4}$	900,201
1865	5,823	46·1	88	8·92	46	44 10	$5\frac{5}{8}$	$6\frac{7}{8}$	854,295
Mean-	4,707	44.6	88	6·07	36·2	47 0	$5\frac{1}{4}$	6	839,296

In 1867 the sickly winter was cold and comparatively dry, the spring after April had closed warm, the summer not hot until towards its close, and the autumn comparatively cold.

Last year, which was without parallel for sickliness in all the 12, was without parallel also for its uniformly high temperature, little rainfall, and atmospheric dryness. It was only in the latter part of October and in November that the mean temperature fell for any number of consecutive weeks below the average of the season. The average price of wheat was 72*s.* in the winter, 61*s.* in the spring, and 59*s.* in the summer; trade was depressed and pauperism excessive. No wonder, with this accumulation of causes, that the sickness of the year was so great.

The fluctuations of general sickness from week to week are mainly dependent upon the variations of temperature and the occurrence of drought or rainfall. An examination of the diagrams will show that commonly a rise of mean temperature in any week above that of the previous week is associated with an increase of general sickness, while a fall of mean temperature is commonly associated with a reduction in the quantity of general sickness. The greater the extent of these rises and falls the more certain on the whole is the occurrence of the associated normal alteration in amount of sickness. This variation of sickness with fluctuations in temperature is more decided in the colder than in the warmer seasons of the year. It is a subject which I have discussed so fully elsewhere (Med. Chir. Trans., vols. l. and li.), that I need say no more about it here. There are, however, two periods of the year when the rule ceases to apply. One of these is in the spring of the year, when the mean temperature begins permanently to rise above 40°, and the other in the end of the summer, when the temperature usually falls with more or less rapidity below 59°, with considerable increase in the atmospheric humidity. With respect to drought and rainfall, the examination of the diagrams seems to show that, whatever their operation may be on the whole upon the absolute amount of sickness, the first effect of rainfall is to reduce the number of new applicants for relief of sickness, and of absence of rain to increase their number. On analysing tables which I have constructed for the seven years, 1859 to 1865, I find that increase of sickness apparently occurred in 61 per cent. of the weeks in which there happened an entire absence of rainfall: that in weeks in which less than half an inch of rain fell decrease of sickness occurred in only 46 per cent., in weeks in which half an inch and less than one inch fell decrease of sickness happened in 53 per cent., and when more than one inch fell decrease of sickness happened in 61 per cent. The absence of rain and the occurrence of rain both operated more effectually in their several directions when associated with a fall of mean temperature than when associated with a rise.

Diseases of the Organs of Respiration.

Under this term I have grouped together bronchitic and catarrhal affections, asthma, pneumonia, and pleurisy. Not but that the meteorological conditions promotive of these several kinds of attack may be different, but because in the kind of practice from which the data of sickness are taken I find that some of them are not clearly distinguished from others. This is especially the case with the inflammatory diseases of the chest in infants. I exclude phthisis.

The total number of cases of respiratory disease recorded during the

12 years is 47,857. They were distributed among the several years as follows:—

In 1857	2,490	cases, or	19·4	per cent. of all cases.
„ 1858	2,903	„	20·9	„ „
„ 1859	2,520	„	16·7	„ „
„ 1860	4,043	„	18·5	„ „
„ 1861	3,331	„	14·2	„ „
„ 1862	3,999	„	16·7	„ „
„ 1863	4,439	„	16·6	„ „
„ 1864	4,128	„	17·1	„ „
„ 1865	4,088	„	17·4	„ „
„ 1866	4,771	„	17·3	„ „
„ 1867	5,346	„	19·5	„ „
„ 1868	5,799	„	17·7	„ „

As regards the distribution of these diseases on the average throughout the year, it is observable on Diagram 25 that they form one wave, which rises rapidly from the end of the summer during a few weeks, and after attaining its climax subsides through the winter and spring with remarkable deliberation. The following exhibits the distribution of these diseases through the several months and quarters per 100 cases on the average of the 12 years:—

In January	12·8		
„ February	10·9	Winter quarter	34·1 cases.
„ March	10·4		
„ April	8·6		
„ May	6·5	Spring quarter	20·4 „
„ June	5·3		
„ July	4·2		
„ August	4·0	Summer quarter	13·5 „
„ September	5·3		
„ October	8·9		
„ November	12·2	Autumn quarter	32·0 „
„ December	10·9		
	100·0		100·0

It is certain that 10·9 per cent. do not represent the full proportion of December cases, on account of the fallacy previously alluded to. Probably the December cases, if the necessary correction were made, would be equally numerous with the January cases, and thus the autumn would come at least to equal the winter quarter in the prevalence of this class of maladies. It will, therefore, be a fair statement to make that these diseases are at the lowest ebb in the months of July and August; that they begin to prevail in the month of October, and attain their maximum of prevalence in December or January; and then that a gradual, slow, but regular decline takes place through the succeeding months of winter and spring. On the average of the 12 years, the largest number of cases was recorded in the second week of January, and the smallest in the first week in August.

On looking at Diagram 25, it will be observed how very closely the line of general sickness follows that of the respiratory diseases through the year. The correspondence would apparently be almost complete, were it not for the disturbance occasioned by the cropping up of diarrhœal affections in the later spring and in the summer months. It

is this disturbance which evidently occasions the small summer wave in the line of general sickness. The natural inference is, that the quantity of general sickness is chiefly dependent upon the quantity of respiratory disease prevalent at any time, except in the summer season.

I must observe, however, further, that the subsidence of respiratory sickness during the first two or three weeks of December is too great to be attributable to the social cause which lessens the number of new applicants for medical relief during the last weeks of that month, and it is apparently more closely connected with a habitual meteorological condition in these weeks which I shall allude to presently.

Comparing the line of respiratory diseases in Diagram 25 with the meteorological conditions indicated on the table, what strikes us most is the fact that it is almost the precise reverse of the line of mean temperature. It is true that the lines indicate that respiratory diseases are not at their minimum precisely at the time that the highest temperature of the year is attained, nor at their maximum precisely at the time that the lowest temperature is reached; in the former case the minimum is late by about three or four weeks, in the latter the maximum is late by about one week. But this only corresponds with what has been previously remarked about the greater readiness with which these maladies increase among the population than that with which they diminish. Looking for the reason of this general fact, it is difficult to disconnect it with the great difference in the character of the autumn and winter and spring as respects atmospheric humidity, as well as the greater rapidity with which the mean temperature falls from the summer during the autumn than that with which it rises from January to July. The autumn is quite unique in this respect, for not only does the humidity increase most rapidly during September and October, but the humidity of the autumn altogether is very much higher than that of the winter season. Hence it is, probably, that for the same mean temperatures there is in the autumn a larger quantity of respiratory disease than in the winter. Contrast, for instance, the months of November and March. Again, the second week in January was on the whole the most humid week of the whole winter, not the coldest week; and the first week in August was the least humid week of the summer, not the warmest.

I may now refer to the fall in the amount of respiratory diseases, observed in the average of years to occur in the first two or three weeks of December. During the first half or two-thirds of the autumn respiratory diseases were noticed to increase rapidly, and to attain a maximum of prevalence in the last week of November, the 47th week of the year, the mean temperature being 41·2°, and the mean humidity of the air 88. During the next two weeks a mean rise of a degree or a degree and a half of temperature was observed, and although with this the mean humidity was the same or higher, a smaller quantity of respiratory disease occurred on the whole in these weeks.

Table II. shows, for each quarter, the mean meteorological conditions existent in years in which diseases of this class were more or less prevalent. The teaching of the table is not to be mistaken, since it shows for each quarter or season of the year that the occurrence of diseases of this class is promoted by a comparatively low temperature for the season, a comparatively high atmospheric humidity, and much and frequent rain. The only apparent exceptions are, that in the winter quarters the atmospheric humidity was on the whole greater in those years in which respiratory diseases were less prevalent at this season, and that in the autumn there was rather more rain in the years

in which the respiratory diseases prevailed, less than in those in which they were more prevalent. (See Table II., pp. 48, 49.)

Sickness of this kind appears from the diagrams to fluctuate from week to week, increasing in weeks of rise, and decreasing in weeks of fall, of mean temperature. This relation to fluctuations of temperature is very strikingly exemplified in some of the diagrams, and is much more obvious in the colder than in the warmer months. Somewhere about the commencement of the second quarter of the year, when the mean temperature rises permanently above 45°, or thereabouts, this relation ceases for a time to be observable, and rises of mean temperature come to be immediately associated with diminution of respiratory sickness. Also, towards the close of the summer quarter, a similar exceptional occurrence is observed, when the mean temperature falls in the progress of the year below 60°, or thereabouts ; at this time, instead of the falls of temperature being associated with diminution, each weekly reduction of temperature is for a time associated with an increase of respiratory sickness. The exact temperature at which this event is met with varies from year to year ; when the summer has been hot it appears to occur at a higher mean temperature than when the previous summer has been cool. Contrast, for example, the lines of temperature and respiratory sickness towards the end of the summer season in 1868 with those in 1860 or 1862.

Diarrhœal Affections.

The affections thus grouped together are, ordinary diarrhœa, so-called dysentery, and ordinary summer cholera. Of these affections 16,456 cases have been recorded during the 12 years. They were thus distributed :—

In 1857	-	1,375	cases, or	10·7	per cent. of all cases.
„ 1858	-	868	„	6·3	„ „
„ 1859	-	1,322	„	8·7	„ „
„ 1860	-	721	„	3·3	„ „
„ 1861	-	1,395	„	5·9	„ „
„ 1862	-	950	„	3·9	„ „
„ 1863	-	1,340	„	5·0	„ „
„ 1864	-	1,205	„	5·0	„ „
„ 1865	-	1,325	„	5·6	„ „
„ 1866	-	2,586	„	9·4	„ „
„ 1867	-	1,341	„	4·9	„ „
„ 1868	-	2,028	„	6·1	„ „

For the most part then in the years in which respiratory diseases have been proportionally to all sickness less prevalent, diarrhœal affections have been more prevalent. The years 1863, 1866, and 1868 were years in which, however, both respiratory diseases and diarrhœal affections, together with the general sickness, gave high numbers.

The Diagram 25 shows that although diarrhœal affections are met with in practice all the year round, yet the cases only become abundant as the spring draws to a close, during the summer, and the early part of the autumn. Still the following monthly statement of the prevalence of these affections on the mean of 12 years shows that there is a regular wave commencing from the coldest season of the year, rising pretty steadily, but very gradually, to the middle of spring, when the rapidity of increase becomes greater, almost week by week, until the summit of the wave is attained. In like manner these affections diminish rapidly at first, but after about the middle of autumn slowly and steadily to a

TABLE II.—RESPIRATORY DISEASES.

WINTER QUARTERS.

Of greater Prevalence of Respiratory Diseases.						Of less Prevalence of Respiratory Diseases.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1860	1,611	38·9	82	3·80	52	1857	782	36·3	85	3·79	35
1863	1,447	42·5	83	4·08	35	1858	925	37·9	81	3·41	20
1864	1,518	38·2	82	4·27	37	1859	946	43·3	83	2·55	33
1865	1,450	36·6	82	5·94	45	1861	1,098	39·7	89	4·96	40
1866	1,586	41·2	83	9·55	51	1862	1,307	40·6	86	5·73	43
1867	2,002	38·5	83	6·29	51	1868	1,560	41·1	82	6·52	46
Mean -	1,602	39·3	83	5·66	45	Mean -	1,103	39·8	85	4·49	36

SPRING QUARTERS.

1859	554	54·2	77	6·40	29	1857	385	54·3	76	4·06	31
1860	791	50·5	80	10·36	49	1858	466	54·7	72	5·07	30
1863	922	52·6	77	5·99	34	1861	674	51·6	81	4·73	30
1866	1,115	52·9	75	8·00	35	1862	779	53·1	82	7·61	46
1868	1,385	55·1	74	4·22	21	1864	806	53·5	73	3·48	22
						1865	841	56·3	72	7·24	24
						1867	919	54·3	77	6·27	39
Mean -	953	53·1	77	6·99	33	Mean -	695	54·0	76	5·49	31

TABLE II.—*continued.*

SUMMER QUARTERS.

Of greater Prevalence of Respiratory Diseases.						Of less Prevalence of Respiratory Diseases.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1860	534	56·3	85	9·12	52	1857	359	63·3	77	5·73	30
1862	613	60·2	81	5·75	33	1858	342	61·0	74	5·39	29
1863	706	59·1	74	5·18	27	1859	310	62·8	73	7·10	33
1866	652	58·7	80	7·93	45	1861	505	60·4	78	4·20	43
1867	666	59·7	78	11·40	35	1864	512	59·4	71	4·37	24
1868	920	64·1	70	4·40	23	1865	504	62·5	75	6·41	29
Mean -	681	59·7	78	7·29	35	Mean -	422	61·6	75	5·53	31
AUTUMN QUARTERS.											
1858	1,170	43·5	87	3·11	31	1857	964	47·4	92	5·56	23
1860	1,107	42·8	89	4·59	35	1859	710	43·0	87	7·18	48
1862	1,300	45·6	89	7·04	40	1861	1,054	46·4	88	7·23	35
1863	1,364	47·3	86	4·48	34	1864	1,292	43·6	82	4·13	29
1867	1,759	43·1	87	4·52	37	1865	1,293	46·1	88	8·92	46
1868	1,934	45·8	87	8·61	48	1866	1,418	46·5	87	5·36	41
Mean -	1,439	44·7	88	5·39	37	Mean -	1,121	45·5	87	6·39	37

minimum of cases. The distribution of 100 cases through the year may be thus represented month by month:—

In January	2·4		
„ February	2·7	Winter quarter	7·9 cases.
„ March	2·8		
„ April	3·0		
„ May	3·8	Spring quarter	14·3 „
„ June	7·5		
„ July	21·1		
„ August	27·5	Summer quarter	63·4 „
„ September	14·8		
„ October	7·5		
„ November	4·1	Autumn quarter	14·4 „
„ December	2·8		
	100·0		100·0

The spring and autumn then stand on about the same level as to the prevalence of diarrhœal affections, the winter quarter presenting only about half as many cases as either of them. The smallest number of cases was met with on the whole in the first week of the year, and, on the average of the 12 years, the coldest week of all the year. With almost complete regularity the cases increased in number week by week, until from a weekly average of 6·6 cases a weekly average of 91·8 cases was reached in the 30th week of the year, the last week in July. And then, following the line of average diarrhœa, a lessening in the number of cases occurred during two weeks, after which, in the 33rd week, the third week in August, a further rise took place, and the maximum of the year was attained. The regular diminution of diarrhœa succeeded. Now this order of occurrences gives to the summit of the average diarrhœal wave in Diagram 25 a remarkable shape, resembling the vertical section of the crater of a volcano, of which one margin is higher than the opposite. It is a fair representation of an occurrence which the annual diagrams show to have been very common in the course of summer diarrhœa, for the diarrhœal wave-line of most years exhibits more or less of this peculiar form of summit. The number of weeks intervening between the two elevated points is not always the same, nor is the relative height of these points always the same; but there is nearly always some indication more or less marked of a maximum, or apparent maximum, being attained, then of a lessening of diarrhœa, and then of a second real or apparent maximum of cases. It is well seen in the diagrams for 1857, 1858, 1861, 1863, 1864, 1865, and 1867.

I must here draw attention to the regularity with which the line of general sickness follows that of diarrhœa in the 25th diagram, from the 24th to the 37th week.

The line of diarrhœa, however, does not exactly follow that of mean temperature. The lowest part of the line indeed corresponds with the lowest weekly temperature of the year, and it rises as the mean temperature on the whole rises, and as the atmospheric humidity on the whole lessens, but very slowly and gradually. Nothing like an abrupt rise happens until the line of mean temperature marks an elevation of atmospheric warmth to 60° and upwards, in the 25th week. In like manner, during the decline of diarrhœa, the weekly diminution of this kind of sickness ceases to be rapid and becomes smaller, and the diminution more gradual in the 38th week, on the falling of the mean temperature

materially below 60°. In the interval between these periods the rise on the one side and the fall on the other is observed to be considerable week by week. And now I must direct attention to what I may term the two apexes of the cone formed by the diarrhœal line, or to what may be termed the two maximums of diarrhœa. It is to be observed that the first does not correspond with the week of highest mean temperature of the year, but points to a period two weeks later. Following now the line of mean temperature, it appears that on the whole (although it remains high) some reduction occurs in the temperature of the three or four weeks succeeding that of highest temperature, and that then a second rise to a less extent takes place prior to the final fall of the mean temperature of the year to 60° and under. This fact offers some explanation of the peculiar shape of the top of the diarrhœal wave, the second apex corresponding with the week following that of the second rise of temperature. The lesson these facts seem to teach us is this, that a high temperature does not produce diarrhœa by an immediate action upon the system, but by some more gradual process, one probably not confined to the people under its influence, but extended to their surroundings also—the soil, the water, and perhaps also the food. The diagrams for individual years may be appealed to to illustrate the same truths as the diagrammatic summary teaches. It is to be further observed that the top of the diarrhœal wave corresponds also pretty nearly with the period of greatest atmospheric dryness, although not with that of least average summer rainfall.

Table III. exhibits the relation between diarrhœa and the more important meteorological conditions present in seasons of greater or less prevalence of this class of affections. I omit the year 1866 as altogether exceptional—I shall refer to it again—and shall confine myself to the period from June to October, as embracing that which is alone important for our purpose. (See Table III., pp. 52, 53.)

The severity with which the diarrhœal season sets in in the month of June depends clearly upon the heat and dryness of the atmosphere; similar conditions governing also the prevalence of diarrhœal affections throughout the summer quarter. It is remarkable that as diarrhœa approaches the period of its quiescence in October, the months in which it prevailed most were those in which this season of the year was most strongly characterized on the whole by atmospheric humidity and rainfall.

The hot and dry year 1868 illustrates well the meteorological conditions favourable to the prevalence of diarrhœa. Cases of diarrhœa were unusually numerous from the very beginning of the spring quarter, and in the course of the summer it attained a degree of prevalence (1,309 cases) only comparable with that of the summers of 1857 and 1859, and approaching nearest of all to that of the cholera season of 1866.

The exceptional cholera year 1866 deserves particular notice, chiefly because the summer diarrhœa, the recorded cases of which amounted in the three months July, August, and September to 1,879, did not correspond to the meteorological conditions existent during its prevalence. Neither did the summit of the diarrhœal wave, as will be seen on looking at Diagram 19, correspond with that of the wave of epidemic cholera as it presented itself in this district. The mean temperature of the 13 weeks of summer was positively low, viz., 58·7°; that of the four weeks of July being 61·5°, of the four weeks of August 58·9°, and of the five weeks of September 56·9°. The humidity of the atmosphere also was great for the season, and the rainfall considerable. It was therefore impossible to fail in recognizing in this season the operation of a cause other than the ordinary meteorological causes of summer diarrhœa,

TABLE III.

MONTH of JUNE.

Seasons of greater Prevalence of Diarrhœa.						Seasons of less Prevalence of Diarrhœa.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1857 -	106	61·3	74	2·28	12	1860 -	60	54·1	83	6·25	25
1858 -	136	64·1	67	1·24	5	1861 -	110	58·8	80	1·92	16
1859 -	100	61·4	78	2·67	11	1862 -	74	56·5	80	2·02	19
1865 -	202	60·0	70	2·52	6	1863 -	98	57·4	76	3·96	15
1868 -	246	61·5	70	1·85	8	1864 -	104	56·7	73	1·31	11
						1867 -	102	60·0	76	2·47	11
Mean -	158	61·6	72	2·11	8	Mean -	91	57·2	78	2·98	16

MONTHS of JULY, AUGUST, and SEPTEMBER.

1857 -	932	63·3	77	5·73	30	1858 -	458	61·0	74	5·39	29
1859 -	946	62·8	73	7·10	33	1860 -	298	56·3	85	9·12	52
1861 -	888	60·4	78	4·20	43	1862 -	423	60·2	81	5·75	33
1863 -	889	59·1	74	5·18	27	1864 -	751	59·4	71	4·37	24
1867 -	844	59·7	78	11·40	35	1865 -	699	62·5	75	6·41	29
1868 -	1,309	64·1	70	4·40	23						
Mean -	968	61·6	75	6·33	31	Mean -	525	59·9	77	6·20	33

TABLE III.—*continued.*

MONTH of OCTOBER.

Seasons of greater Prevalence of Diarrhœa.

Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.	
1857 -	75	52·2	92	3·93	9
1858 -	58	50·8	85	1·16	9
1859 -	53	51·0	88	2·67	16
1862 -	131	53·9	88	4·17	15
1865 -	145	51·3	87	5·18	16
Mean -	92	51·9	88	3·42	13

Seasons of less Prevalence of Diarrhœa.

Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.	
1860 -	70	50·2	87	1·05	10
1861 -	77	56·5	89	0·95	11
1863 -	81	52·9	86	1·54	14
1864 -	71	50·9	77	1·03	5
1867 -	86	49·1	87	1·51	16
1868 -	69	49·4	87	2·29	14
Mean -	75	51·5	85	1·39	11

producing the enormous amount of diarrhœa observed ;—for the case recorded upon the books, numerous as they were, did not represen anything like all that were admitted under treatment. A considerati of the temperature of the season week by week will put this in a sti clearer light. In the fourth week of June the mean temperature wa 58·1°, and in the fifth week it suddenly rose to 66·3° ; in the wee following it fell 10 degrees, to rise in the second week of July 12 degree to 68·2°, the highest weekly mean of the year. For four or five week after this it progressively fell to 58·0°. The month of June was no remarkable for diarrhœa, and gave no promise, had not cholera bee anticipated, of a heavy diarrhœal epidemic. In the fifth week of Jun only 28 cases were recorded ; in the first week of July there were 5 cases, and they increased week by week thus, 43, 99, 115, 165, 272, 31 the last number being attained in the third week of August, that is, fiv weeks after the maximum temperature of the year had been reache the steady increase of cases having gone on concurrently with a stead decline of mean temperature below 60°. Our maximum of weekl cases of diarrhœa was attained on the second week after the most fat week of cholera in London, which was also the week on which th largest number of cases of the disease was observed in Islingto Diarrhœa then increased as cholera declined.

Measles.

The number of cases of measles recorded during the 12 years w 5,501. It is thus made up :—

In 1857	- -	221 cases,	or 17·2	per 1,000	of all cases.
„ 1858	- -	416 „	30·0	„	„
„ 1859	- -	328 „	21·7	„	„
„ 1860	- -	531 „	24·3	„	„
„ 1861	- -	280 „	12·0	„	„
„ 1862	- -	653 „	27·2	„	„
„ 1863	- -	322 „	12·0	„	„
„ 1864	- -	713 „	29·7	„	„
„ 1865	- -	200 „	8·5	„	„
„ 1866	- -	813 „	29·6	„	„
„ 1867	- -	328 „	11·9	„	„
„ 1868	- -	696 „	21·2	„	„

What strikes a person first in looking at this list is, that, in the limit district to which these figures relate, measles was epidemic regula every second year, the only exception being that 1859 did not exhibit t full subsidence of the disease which this observation would have led o to anticipate. I do not gather from the death register that the years greater prevalence of measles here were years of greater prevale throughout the kingdom. It would seem as if an epidemic of meas so far exhausted the susceptibility of the population here that it did recover itself for two years. There was nothing very decidedly common in the meteorological conditions either of the epidemic ye or of the years of less prevalence of the disease. Contrast for exam the cold wet year 1860 and the excessively hot and dry year 1868. would be interesting to know whether in other limited communiti similar observation has been made. It is remarkable also that the p centage of all cases of sickness was nearly the same number in four of the six epidemic years, viz., 1858, 1862, 1864, and 1866. All can be said is that on the whole, putting out 1868, the years of gre prevalence of measles were rather cooler years than those of prevalence.

Diagram 26 exhibits the line of measles in accordance with our 12 years' experience of its distribution through the several seasons of the year. It forms two waves in the year, the one culminating in the latter part of spring, the other at the end of autumn. Of these the earlier is the more considerable wave. Assuming the yearly occurrence of 100 cases, the normal distribution of measles may be represented as follows:—

In January	7·1		
„ February	6·0	Winter quarter	19·3 cases.
„ March	6·2		
„ April	6·5		
„ May	11·3	Spring quarter	30·4 „
„ June	12·6		
„ July	10·4		
„ August	7·5	Summer quarter	25·8 „
„ September	7·9		
„ October	6·8		
„ November	8·3	Autumn quarter	24·5 „
„ December	9·4		
	100·0		100·0 „

The smallest number of cases occurred in the month of February, the largest number in June. The spring wave of the epidemic rises with some suddenness in May, but subsides more gradually to October. Altogether the spring quarter was that in which measles prevailed most; it was less prevalent in summer and autumn, and least so in the winter quarter.

Referring to the diagrams, we find that out of the six epidemic years, 1858, 1860, 1862, 1864, 1866, and 1868, there were four in which the largest number of cases occurred in the spring quarter, and only two, 1862 and 1868, in which the largest number occurred in the autumn quarter; still in 1862 the largest monthly number of cases occurred in May and June, and the next largest number in December. In 1868 the largest number of cases occurred in December.

In the non-epidemic years, 1857, 1859, 1861, 1863, 1865, 1867, spring was not so specially favoured. In two of these years, 1859 and 1865, the largest number of cases occurred in the winter quarter. In 1859 spring and summer were little less troubled with measles, the largest monthly number of cases occurring in May and September. In 1865 the winter measles was a mere prolongation of the autumnal epidemic of 1864 into January and February. The epidemic of 1866 began in December of 1865, the disease having been in abeyance from March to that month. In two of these years, 1857 and 1867, the greatest number of cases of measles occurred in the autumn. When this happened the disease abated in the succeeding winter. In only one of these years, 1863, did the largest number of cases occur in the spring, and in only one, 1861, did the largest number occur in the summer season.

In five out of the six epidemic years, not only was there a large number of cases forming a wave of measles culminating in the spring and early part of summer, but there was a considerable autumnal wave also. The exceptional year was the cold wet year 1860, when the autumnal wave did not occur at all. Only in two out of these five years was the autumnal wave greater than the spring wave, namely in 1862 and 1868. In 1862 it was very slightly greater, the greatest monthly number of cases occurring in June and July. In 1868 the disease steadily in-

creased quarter by quarter as the year progressed, the summer cases exceeding the spring slightly, and the winter greatly exceeding either. The largest number of cases happened in November and December.

In four out of six of the non-epidemic years there was an autumnal wave greater than the spring wave, viz., in 1857, 1861 (slightly), 1865, and 1867 (considerably).

Although it must be concluded that on the whole measles is more abundant in the spring quarter, yet the occurrence of an autumnal wave must be regarded as a more constant event.

There were four years out of the 12, viz., 1861, 1866, 1867, and 1868, in which measles was more abundant in the summer than in the spring quarter. In 1861 the largest number of cases occurred in August; in 1866 about an equal proportion of cases happened in June, July, August, and September; in 1867 there were more cases in July and August than in June; and in 1868 the disease, which prevailed considerably in May, declined during June, July, and August, to increase in September up to the end of the year.

In searching for the meteorological conditions which occasion the waves of measles, which promote its increase or its decline, we may first of all consider the habitual meteorological conditions of those seasons which our 12 years' experience teach us are favourable to the spread of the disease, or the reverse.

And here we must recollect that the law by which contagious diseases spread in a population is, that when once started under favourable conditions of weather and season, another element of rapid extension comes into play, namely, the growing increase in the number of foci of contagion; so that so long as the conditions of weather and season are not absolutely unfavourable to the life and development of the morbific germs, the disease increases in extent, and does not lessen until either the susceptibility of the population is exhausted, or conditions of season come about absolutely unfavourable to the spread of the malady. Moreover in estimating the conditions of weather favourable to measles, or the reverse, we must bear in mind that this disease has an incubation of about 14 days, and make an allowance accordingly. I must give this as an instruction in the reading of the diagrams so far as measles is concerned. In the decline of an epidemic we must similarly bear in mind the progressive diminution of the foci of contagion. Now referring to my records of the 12 years, I find that on the average measles began to assume its epidemic character in the 18th week of the year, that is, in the first week of May. The average weekly meteorological conditions and average weekly number of cases of measles for each week about this time were as follows:—

—	Average of new Cases Two Weeks later.	Mean Temperature.	Mean daily Range of Temperature.	Mean Humidity.	Mean Rainfall.	Rainy Days in 12 Years.
		°	°		Inches.	
12th week	5·2	40·9	15·0	81	0·41	33
13th „	7·2	45·4	15·8	81	0·38	45
14th „	6·0	46·6	17·4	82	0·38	34
15th „	8·8	46·6	17·4	81	0·44	40
16th „	11·0	48·2	20·3	75	0·14	19
17th „	11·5	49·1	18·9	79	0·50	32
18th „	14·1	49·2	19·2	74	0·22	23

From which we may gather that the conditions most favourable to the outbreak of the spring epidemic of measles are, the rise of the mean tem-

rature to 48° or upwards, with an increase of daily range to 20° and wards, combined with a lowering of the atmospheric humidity to 75° nd under, the rainfall and the number of wet days being at the same me much below the average of the whole season. It is worthy of otice that the meteorological averages of the 17th week exhibited a turn towards those of the 15th, and that with this the average of cases measles was nearly stationary. Again, that on the average tempe- ature rising in the 18th week above that of the 16th, with a reduction the humidity and rain, measles rose again above the average of the 6th week.

Again, the average number of cases of measles began to fall perma- ently in the 28th week, that is, in the second week of July. The average f cases and meteorological conditions about this time were as follows :—

—	Average of new Cases Two Weeks later.	Mean Tempera- ture.	Mean daily Range of Temperature.	Mean Humidity.	Mean Rainfall.	Rainy Days in 12 Years.
		°	°		Inches.	
22d week	14·8	57·8	21·1	76	0·82	33
23d „	13·3	58·5	20·5	78	0·63	32
24th „	12·3	58·8	21·8	74	0·35	26
25th „	13·2	60·2	22·0	75	0·47	32
26th „	12·1	60·4	20·7	74	0·48	32
27th „	10·1	59·9	21·5	74	0·40	29
28th „	8·0	63·6	23·7	73	0·23	17
29th „	9·0	63·5	20·2	73	0·59	30

From which it appears that the condition and the only condition which his table indicates, as concerned in the arrest of the spread of measles, s the rise of the temperature of the atmosphere above a mean of 60°.

And now for the autumnal epidemic. The first outbreak of this took place on the average of the 12 years in the 47th week of the year, that s, in the last week of November. The averages about this time are as follows :—

—	Average of new Cases Two Weeks later.	Mean Tempera- ture.	Mean Daily Range.	Mean Humidity.	Mean Rainfall.	Rainy Days in 12 Years.
		°	°		Inches.	
42nd week	7·2	51·2	14·3	88	0·87	46
43rd „	8·6	48·8	14·1	89	0·54	35
44th „	8·2	46·7	14·8	88	0·47	41
45th „	11·0	43·0	13·1	87	0·30	24
46th „	10·7	41·6	12·7	88	0·49	30
47th „	12·3	41·2	12·4	88	0·44	34
48th „	8·6	42·2	10·3	88	0·44	40
49th „	10·1	42·9	10·9	90	0·46	42
50th „	7·4	41·5	9·2	88	0·35	36
51st „	9·0	40·8	10·4	86	0·28	29
52nd „	7·0	39·6	9·7	87	0·31	31
1st „	8·1	35·2	9·9	85	0·39	40
2nd „	5·5	37·4	10·3	87	0·63	41

This seems to show that the arrival of the temperature below 49° and especially to about 43°, with a diminution of range to about 13 degrees, and again (as in the spring) a small rainfall for the season, are the conditions which favour the outbreak of the autumnal epidemic.

The circumstances promotive of the decline of the autumnal epidemic are less obvious; all that appears clearly is, that it shows a manifest disposition to decline on the fall of the mean temperature below 42°.

Putting the characters of the two epidemic seasons together, I think we may conclude that—1. The conditions promotive of an outbreak of measles in any year are a temperature between 43° and 48°.—2. That a low atmospheric humidity and small rainfall assist materially in promoting an outbreak. Probably the higher humidity of the autumn than of the spring is one reason why ordinarily the autumnal epidemic is less extensive than the spring epidemic.—3. That a rise of mean temperature above 60° and a fall below 42° tend distinctly to arrest an epidemic.

Table IV. (pp. 59, 60) exhibits the leading meteorological condition of each quarter of the several years, dividing the quarters into those in which measles prevailed more or less. It seems to show—

1. That in the *winter* season a comparatively warm and dry atmosphere with excess of rainfall are conditions which favour the extension of measles among a population more than the opposite conditions.

2. That in the *spring* a comparatively cool season with atmospheric dryness and excess of rainfall promote the spread of the disease.

3. That in the *summer* measles spreads more when the atmosphere is comparatively cool and moist, with excessive and frequent rains.

4. That in the *autumn* a comparatively warm dry atmosphere with small rainfall is most favourable to the operation of the morbific cause.

These inferences, although at the first blush contradictory to those just enunciated, need not be regarded as actually so. The former may relate to the conditions favourable to the life and development of the germs, the latter to those which predispose a population, just as bad hygienic conditions generally would do, to suffer from the malady.

There is only one other point I need draw attention to in relation to the line of measles in the diagrams, and this is, that making the necessary fortnight's allowance (or thereabouts) for incubation, measles appears to have increased commonly after any great alteration of mean temperature, whether by way of increase or diminution. That is to say, one is led to expect from the experience of the 12 years, especially when an epidemic is due, that it will break out about a fortnight after the occurrence of a serious rise in the mean temperature of the year, and that in its progress an increase of cases may be anticipated in the second week following any considerable rise or fall of temperature. In the autumn, as the temperature of 48° is approached, the outbreak of the epidemic may be anticipated when a serious fall of mean temperature occurs.

There was among the 12 years one only in which measles pretty steadily increased quarter by quarter through the year, the autumnal epidemic being more serious than the spring epidemic. This was the year 1868; hence it is instructive. The spring epidemic broke out very suddenly in the 17th week of the year, that is, in the last week of April. There was some abatement in the month of August, but it burst out afresh and with severity in the middle of September, and was very severe as the year closed. Hence it will be desirable to exhibit in a table the corresponding meteorological conditions.

TABLE IV.

Winter Quarters.

Of greater Prevalence of Measles.						Of less Prevalence of Measles.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1859 -	98	43·3	83	2·55	33	1857 -	59	36·3	85	3·79	35
1864 -	190	38·2	82	4·27	37	1858 -	64	37·9	81	3·41	20
1865 -	101	36·6	82	5·94	45	1860 -	75	38·9	82	3·80	52
1866 -	188	41·2	83	9·55	51	1861 -	63	39·7	89	4·96	40
						1862 -	35	40·6	86	5·73	43
						1863 -	69	42·5	83	4·08	35
						1867 -	53	38·5	83	6·29	51
						1868 -	55	41·1	82	6·52	46
Mean -	144	39·8	82	5·56	41	Mean -	59	39·4	84	4·83	40

Spring Quarters.

1858 -	149	54·7	72	5·07	30	1857 -	51	54·3	76	4·06	31
1860 -	260	50·5	80	10·36	49	1859 -	91	54·2	77	6·40	29
1862 -	207	53·1	82	7·61	46	1861 -	56	51·6	81	4·73	30
1864 -	322	53·5	73	3·48	22	1863 -	100	52·6	77	5·99	34
1866 -	206	52·9	75	8·00	35	1865 -	26	56·3	72	7·24	24
1868 -	177	55·1	74	4·22	21	1867 -	53	54·3	77	6·27	39
Mean -	220	53·3	76	6·45	33	Mean -	62	53·9	77	5·78	31

Table IV.—*continued.*

Summer Quarters.

Of greater Prevalence of Measles.						Of less Prevalence of Measles.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1858 -	89	61·0	74	5·39	29	1857 -	36	63·3	77	5·73	30
1859 -	91	62·8	73	7·10	33	1861 -	95	60·4	78	4·20	43
1860 -	130	56·3	85	9·12	52	1863 -	77	59·1	74	5·18	27
1862 -	196	60·2	81	5·75	33	1864 -	82	59·4	71	4·37	24
1866	283	58·7	80	7·93	45	1865 -	32	62·5	75	6·41	29
1868 -	197	64·1	70	4·40	23	1867 -	89	59·7	78	11·40	35
Mean -	164	60·5	77	6·61	35	Mean -	68	60·7	76	6·21	31

Autumn Quarters.

1858 -	114	43·5	87	3·11	31	1857 -	75	47·4	92	5·56	23
1862 -	215	45·6	89	7·04	40	1859 -	48	43·0	87	7·18	48
1864 -	119	43·6	82	4·13	29	1860 -	66	42·8	89	4·59	35
1866 -	136	46·5	87	5·36	41	1861 -	66	46·4	88	7·23	35
1867 -	133	43·1	87	4·52	37	1863 -	76	47·3	86	4·48	34
1868 -	267	45·8	87	8·61	48	1865 -	41	46·1	88	8·92	46
Mean -	164	44·7	87	5·46	37	Mean -	62	45·5	88	6·32	36

—	No. of new Cases Two Weeks later.	Mean Temperature.	Mean Daily Range.	Mean Humidity.	Rainfall.	Rainy Days.
1868.		°	°		Inches.	
1 h week	0	44·0	17·3	84	0·07	3
2 h „ -	5	42·7	15·0	77	0·51	3
3 h „ -	4	45·2	23·3	78	0·00	0
4 h „ -	20	45·7	20·5	77	0·39	2
5 h „ -	20	45·7	18·9	82	0·10	1
6 h „ -	27	50·2	14·8	81	1·47	6
7 h „ -	17	53·0	20·9	73	0·12	1
8 h „ -	20	53·3	26·7	73	0·03	1
9 h „ -	10	57·5	24·9	77	0·00	0
10 st „ -	8	59·4	24·0	73	0·26	2
11 nd „ -	22	59·2	23·0	77	*1·38*	3
12 rd „ -	14	58·6	22·9	76	0·14	2
13 h „ -	10	60·3	25·4	63	0·00	0
14 th „ -	13	65·4	27·9	69	0·04	1
15 th „ -	15	63·6	25·6	68	0·29	2
16 th „ -	18	61·6	23·4	68	0·01	1
17 th „ -	17	65·7	27·2	64	0·13	1
18 th „ -	10	*70·7*	*27·8*	*64*	0·70	2
19 th „ -	10	69·2	27·8	59	0·01	1
20 st „ -	14	67·6	26·5	64	0·23	2
21 nd „ -	18	69·8	24·7	65	0·14	1
22 rd „ -	17	64·3	21·4	71	0·37	3
23 th „ -	5	61·9	*12·2*	*87*	1·97	6
24 th „ -	25	58·1	*19·4*	*71*	0·06	1
25 th „ -	21	65·3	26·9	77	0·00	0
26 th „ -	14	64·0	25·5	70	0·00	0
27 th „ -	20	57·1	17·0	71	0.27	1
28 th „ -	23	58·4	18·2	80	0·51	4
29 th „ -	14	53·7	*12·3*	*85*	1·17	5
30 st „ -	13	51·8	18·5	87	0·60	3
31 nd „ -	15	49·7	20·1	88	0·03	2
32 rd „ -	22	*42·6*	16·4	90	0·49	4
33 th „ -	27	46·8	13·7	87	1·06	3
34 th „ -	23	43·9	13·9	83	0·18	2
35 th „ -	13	40·7	10·5	85	0·06	3
36 th „ -	18	39·8	11·4	84	0,04	2
37 th „ -	23	42·5	9·3	92	0·88	5
38 th „ -	32	45·6	7·7	91	0·31	4
39 th „ -	24	47·6	9·7	87	1·30	4

In studying this table it must be kept in mind that 1868 was a year in which an epidemic of measles was due, and had it not been for the remarkable temperature and drought of the spring and early summer, the epidemic would have prevailed, in all probability, chiefly in this season. As it was, these conditions seem to have checked its progress, and deferred the severity of the outbreak until the temperature fell to a point at which the morbific germs could be in circumstances to operate effectually upon the population whose susceptibility had not yet been exhausted. The outbreak commenced about a fortnight or three weeks after a period of remarkable absence of rain, the temperature having arrived midway between 43° and 48°, the range being about 20 degrees, and the humidity of the atmosphere for a short time having fallen to about 77. I have emphasized in the table some of the occurrences in certain weeks. In the 22nd week, after long drought, a heavy rainfall (comparatively) occurred, and measles rose a fortnight after from eight cases to 22 in the week. It subsided remarkably after the 24th week, in association with a remarkable rise of temperature with very unusual dryness of the atmosphere and lack of rain, and another decided subsidence took place

in the 30th week; a fortnight after the mean temperature had attaine the excessive height of 70·7° with a mean daily range of 27·8 and a humidity of only 64, and this notwithstanding comparativel much rainfall in that week. Measles again underwent a remarkab fall in the 36th week from 17 cases to 5, the 34th week being distinguishe from those before and succeeding it by a very high atmospheric humidit and an unusually small mean daily range for the season, and this agai notwithstanding the heavy and continued rainfall. In the next wee measles increased again on the reduction of the mean temperature belo 60°, with greater range and a humidity of 71. In the 42nd wee another remarkable reduction of measles occurred, following a curiou and sudden reduction of range and increase of humidity, and agai uninfluenced by the heavy and continued rainfall. The latter seems onl to have operated in promoting the spread of measles in this yea when not associated with a high atmospheric humidity. Measles agai underwent a great increase, the commencement of the autumnal epidem in the 45th week. In the 42nd the mean temperature first fell co siderably below 50°. A temperature about or below 40° in the 46 or 47th weeks evidently checked its progress, but it recovered itse when in the 48th week the mean temperature again rose to above 42·5°.

Scarlatina.

The number of cases of scarlatina recorded during the 12 years w 3,850. It is thus made up :—

In 1857 -	- 75	cases, or	5·8	per 1,000	of all cases.
„ 1858 -	- 162	„	11·7	„	„
„ 1859 -	- 426	„	24·9	„	„
„ 1860 -	- 232	„	10·6	„	„
„ 1861 -	- 247	„	10·5	„	„
„ 1862 -	- 299	„	12·4	„	„
„ 1863 -	- 630	„	23·5	„	„
„ 1864 -	- 269	„	11·2	„	„
„ 1865 -	- 292	„	12·4	„	„
„ 1866 -	- 255	„	9·2	„	„
„ 1867 -	- 524	„	19·1	„	„
„ 1868 -	- 439	„	13·4	„	„

It is observable that three non-epidemic years intervened between t epidemic years 1859 and 1863, and three again between the epidem years 1863 and 1867. Last year, in all respects exceptional, was al marked by an epidemic of scarlatina, but of less extent than that 1867. On the whole these epidemic years were years of comparative high mean temperature and atmospheric dryness. Putting aside t epidemic years, the prevalence of scarlatina in the non-epidemic ye did not differ very materially. The proportion of scarlatina to all ca of sickness differed very little in 1859 and 1863. In 1867, the fou year from the last epidemic, the outbreak of scarlatina was on the wh less severe, perhaps in association with the comparatively low me temperature of the year. 1868 should, in accordance with previ experience, have been a non-epidemic year; and in point of f although the cases were very numerous absolutely, the proportion bo to all cases of sickness was not much higher than that in 1862 and 18 Probably the comparatively high absolute number was due to sim causes which occasioned the great general sickness among the poor year, combined with the excessive heat and dryness of the first th quarters.

Diagram 26 exhibits the line of distribution of scarlatina through

veral seasons of the year, in accordance with our 12 years' experience. carlatina forms but one grand wave in the year.

Assuming the yearly occurrence of 100 cases, the following indicates e proportion of cases which occurred in the several seasons of the ar :—

In January	6·5	
„ February	6·8	Winter quarter, 17·7 cases.
„ March	4·4	
„ April	5·7	
„ May	5·6	Spring quarter, 17·3 „
„ June	6·0	
„ July	9·1	
„ August	8·6	Summer quarter, 29·9 „
„ September	12·2	
„ October	14·5	
„ November	11·4	Autumn quarter, 35·1 „
„ December	9·2	
	100·0	100·0

The smallest number of cases occurred in the month of March, and he prevalence of the disease has been in our experience greater as the pring and summer advanced, until the month of October, in which the lisease has been observed to be more prevalent than in any other. From October it has been observed to become less prevalent, through November, December, January, and February to March. Scarlatina, hen, is a disease which attaches itself with very marked preference to he latter half of the year. It is curious that it should be about equally prevalent on the whole in months of such opposite characters as July nd December.

Of the four epidemic years, 1859, 1863, 1867, and 1868, there were two, 1859 and 1867, in which the largest number of cases occurred in the autumn quarter ; in the other two years, 1863 and 1868, the largest number occurred in the summer quarter.

Of the eight non-epidemic years there were four, 1857, 1858, 1864, and 1865, in which the summer quarter exhibited the largest quantity of scarlatina ; three, 1861, 1862, and 1866, in which the greatest number of cases occurred in the autumn.

It would appear as if some preparation were made, or warning given, the year previous to an epidemic of scarlatina. Thus in 1858 scarlatina suddenly burst out in the month of September, with 51 cases in five weeks (14 having been recorded in August). It then subsided as the autumn proceeded, but still there was a considerable number of cases. It fell almost into abeyance in February and March of 1859, after which it increased quarter by quarter to the end of the year. The great outburst began in September. The last week of this month, with the whole of October and November, up to the last week of that month, embraced the worst period of the most extensive epidemic of the whole 12 years. It did not completely come to an end until the end of March 1860.

Again, the grand epidemic year 1863 was preceded by a sharp autumnal outbreak in 1862. Indeed, one may go so far as to regard this epidemic as extending without break from September 1862 to the end of 1863. The 1859 epidemic came to an end in April 1860 ; and with the exception of the ordinary increase of the disease which may be expected every summer and autumn, nothing remarkable was observed until the end of the summer of 1861. In September, October, and

November a slight epidemic wave occurred, which extended, subsiding, however, through the winter of 1862. The disease almost died out in June, but gradually increased afterwards; and in September began the heavy epidemic which only terminated with the end of the next year, 1863. There was merely some little abatement of the epidemic violence at times during the winter and spring of 1863, but from July to October it exhibited its chief activity.

The epidemic which we have last experienced commenced with an outburst of the disease in the autumn of 1866. It subsided a little during the winter quarter of 1867, but then increased from April, month after month, until October, upon which month the chief violence of the epidemic was expended. A partial subsidence of the disease then commenced, continuing through January, February, and March 1868. The spring months of this year, however, saw the epidemic reviving; and it was as severe, to say the least, in the spring and summer of 1868 as in those of 1867. After September the epidemic declined, and only 99 cases were recorded in the autumn quarter of 1868, against 222 in the corresponding period of the previous year.

Unlike measles, scarlatina has so brief an incubation that it may be disregarded practically in any consideration of its meteorological associations. Following the same method of inquiry that we pursued with measles, we may study, on the following table, first of all, the conditions which, on the average of years, seem to promote the outbreak of the disease or favour its decline. We may consider the disease as usually pretty much in abeyance until about the 27th week of the year, that is, the first week in July.

—	Average of new Cases.	Mean Temperature.	Mean daily Range.	Mean Humidity.	Mean Rainfall.	Rainy Days, 12 Years.
		°	°		Inches.	
24th week	4·0	58·8	21·8	74	0·35	
25th „ -	4·0	60·2	22·0	75	0·47	
26th „ -	3·6	60·4	20·7	74	0·48	
27th „ -	*6·5*	*59·9*	*21·5*	*74*	*0·40*	
28th „ -	6·7	63·6	23·7	73	0·23	
29th „ -	7·0	63·5	20·2	73	0·59	
30th „ -	6·6	62·0	21·4	73	0·63	
31st „ -	5·4	61·1	22·4	71	0·39	
32nd „ -	6·7	62·4	21·2	76	0·65	
33rd „ -	6·5	62·2	20·0	76	0·40	
34th „ -	6·8	60·8	19·3	78	0·74	
35th „ -	7·7	59·8	19·9	76	0·38	
36th „ -	7·5	60·3	18·9	79	0·48	
37th „ -	8·2	58·7	16·3	78	0·50	
38th „ -	*10·2*	*56·7*	*16·2*	*79*	*0·40*	
39th „ -	11·5	55·5	17·1	84	0·55	
40th „ -	12·3	54·5	16·2	83	0·37	
41st „ -	*11·5*	*52·5*	15·1	*87*	0·50	
42nd „ -	9·9	51·2	14·3	88	0·87	
43rd „ -	9·2	48·8	14·1	89	0·54	
44th „ -	10·1	46·7	14·8	88	0·47	
45th „ -	7·3	43·0	13·1	87	0·30	
46th „ -	8·3	41·6	12·7	88	0·49	
47th „ -	8·0	41·2	12·4	88	0·44	
48th „ -	8·4	42·2	10·3	88	0·44	
49th „ -	8·8	42·9	10·9	90	0·46	
50th „ -	6·5	41·5	9·2	88	0·35	
51st „ -	5·9	40·8	10·4	86	0·28	
52nd „ -	4·4	39·6	9·7	87	0·31	

There were two periods then at which an increase of scarlatina took ace. The first, a moderate increase in the first week of the summer uarter on the arrival of the yearly rise of mean temperature to or bout 60°. The other, as the summer was closing, when the mean mperature had recently arrived again at about 60° and had begun to fall low it. In the instance of the first increase it is observable that some rce was evidently operating antagonistic to the active propagation of e disease, in the latter increase some condition was operating favour-ble to its propagation. The rainfall was not very different in the two stances, but there was a decided difference in the range of tempera-re on and after the 27th week of the year and that on and after the 8th week. On and after the 27th week the mean daily range was l degrees and upwards, and the humidity was low, from 73 to 76. On nd after the 38th week the mean daily range was below 16 degrees, nd the humidity 79 and upwards to 83. It is observable that the ecline of the disease in the mean of years began to take place as the ean temperature and range fell below 53° and 16°, and the humidity se to 87 and upwards.

The inferences apparently deducible are, that—

1. A mean atmospheric temperature of about 60° or between 56° and 0°, is that most favourable to the outbreak of scarlatina. 2. That for ts free development it is necessary that the humidity of the atmosphere hall not much exceed 86, or be much less than 74. 3. That a higher emperature than 60° does not appear to be in itself unfavourable to the pread of scarlatina. 4. That a fall of mean temperature below 53° ends to arrest an epidemic of this disease.

Table 5 exhibits for each quarter the most important meteorological conditions of the seasons in which scarlatina was more or less prevalent. (See Table V., pp. 66, 67.) From this it appears :—

1. That at *all seasons* of the year, but more decidedly in the winter and spring—seasons in which scarlatina is not commonly epidemic—its extension is favoured by a temperature above the average of the season.

2. That at all seasons *except the autumn*, a dry as well as a warm atmosphere is calculated to promote its epidemic prevalence.

3. That in the *winter*, *spring*, and *summer* the disease is less disposed to spread when a good deal of rain is associated with the comparatively low temperature and high atmospheric humidity, but in the *autumn* the table indicates that the warmer and wetter seasons were those which proved most favourable to the extension of the epidemic.

One word about the epidemic prevalence of scarlatina last year. In accordance with the experience of former epidemics, the epidemic of 1867 might have been expected to terminate in the winter of 1868 That it did not, but that it extended through the year, was probably due to two causes—the high temperature and atmospheric dryness of the winter, spring, and summer, and the operation of those general causes of sickliness among the poor which have already been referred to.

Hooping Cough.

The 4,580 cases of hooping cough recorded during the 12 years were distributed among them thus :—

In 1857	-	218 cases,	or 17·0	per 1,000	of all cases.
„ 1858	-	372 „	26·8	„	„
„ 1859	-	259 „	17·1	„	„
„ 1860	-	264 „	12·0	„	„

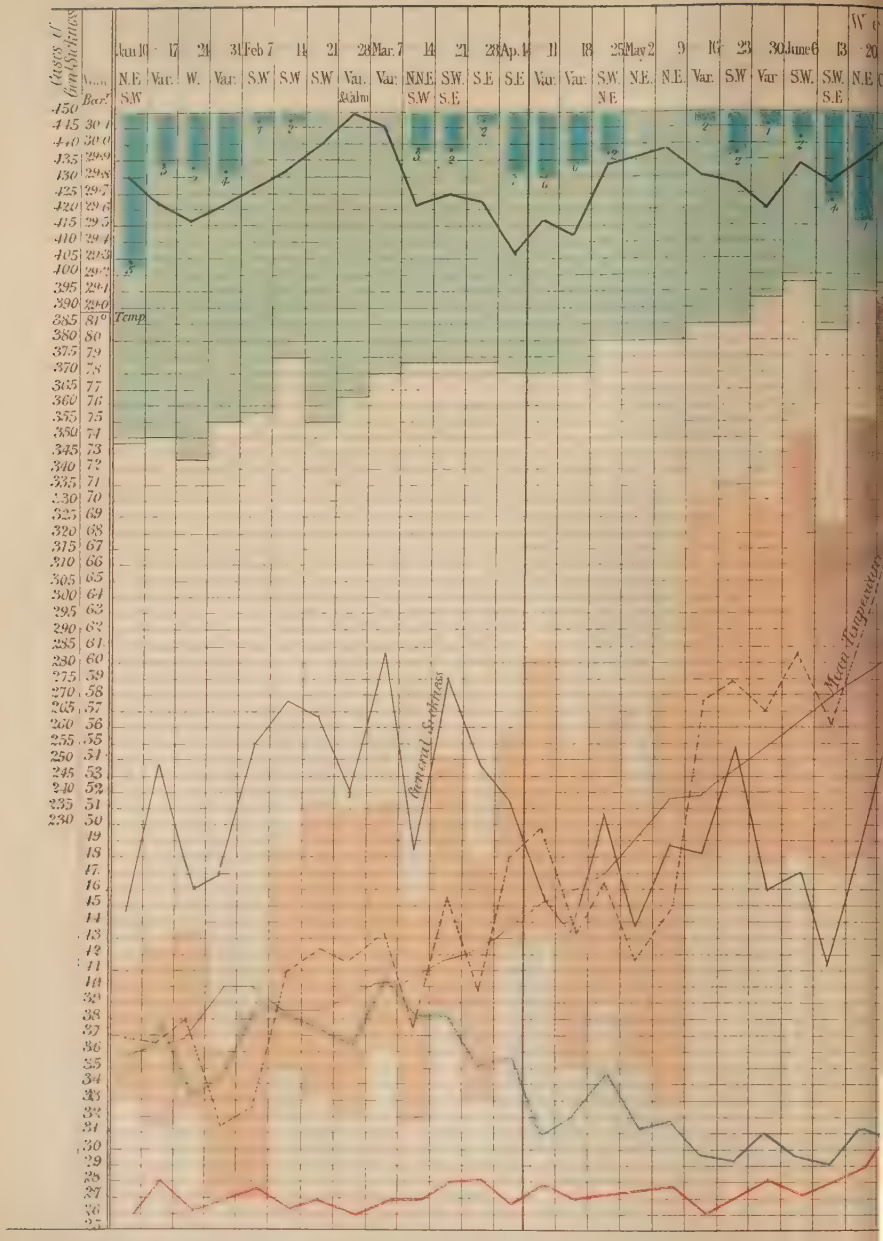
TABLE V.

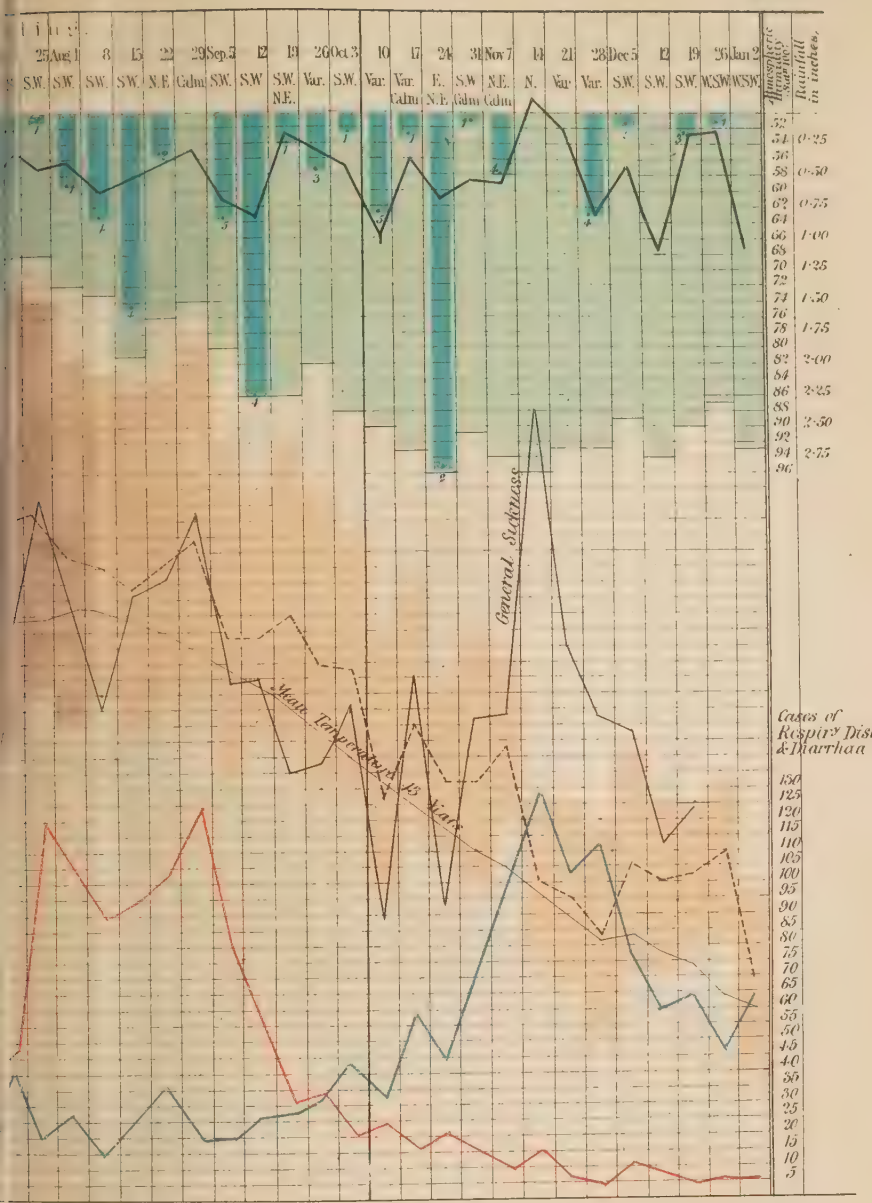
WINTER QUARTERS.

Of greater Prevalence of Scarlatina.						Of less Prevalence of Scarlatina.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1859 -	35	43·3	83	2·55	33	1857 -	10	36·3	85	3·79	35
1860 -	76	38·9	82	3·80	52	1858 -	8	37·9	81	3·41	20
1863 -	129	42·5	83	4·08	35	1861 -	19	39·7	89	4·96	40
1865 -	72	36·6	82	5·94	45	1862 -	65	40·6	86	5·73	43
1867 -	71	38·5	83	6·29	51	1864 -	50	38·2	82	4·27	37
1868 -	94	41·1	82	6·52	46	1866 -	41	41·2	83	9·55	51
Mean -	79	40·1	82	4·86	43	Mean -	32	39·0	84	5·28	37

SPRING QUARTERS.

1859 -	67	54·2	77	6·40	29	1857 -	7	54·3	76	4·06	31
1863 -	119	52·6	77	5·99	34	1858 -	14	54·7	72	5·07	30
1864 -	58	53·5	73	3·48	22	1860 -	36	50·5	80	10·36	49
1865 -	55	56·3	72	7·24	24	1861 -	28	51·6	81	4·73	30
1867 -	95	54·3	77	6·27	39	1862 -	37	53·1	82	7·61	46
1868 -	105	55·1	74	4·22	21	1866 -	50	52·9	75	8·00	35
Mean -	83	54·3	75	5·60	28	Mean -	28	52·8	78	6·63	36


Jan 10
17
24
31 Feb 7
14
21
28 Mar. 7
14
21
28 Ap. 4
11
18
25 May 2
9
16
23
30 June 6
13
20
N.E.
S.W.
Var.
W.
S.W
N.N.E.
S.E
Calm
Inches
Bar.
Temp.
Mean Temperature
Respiratory Disea



Diarrhœa

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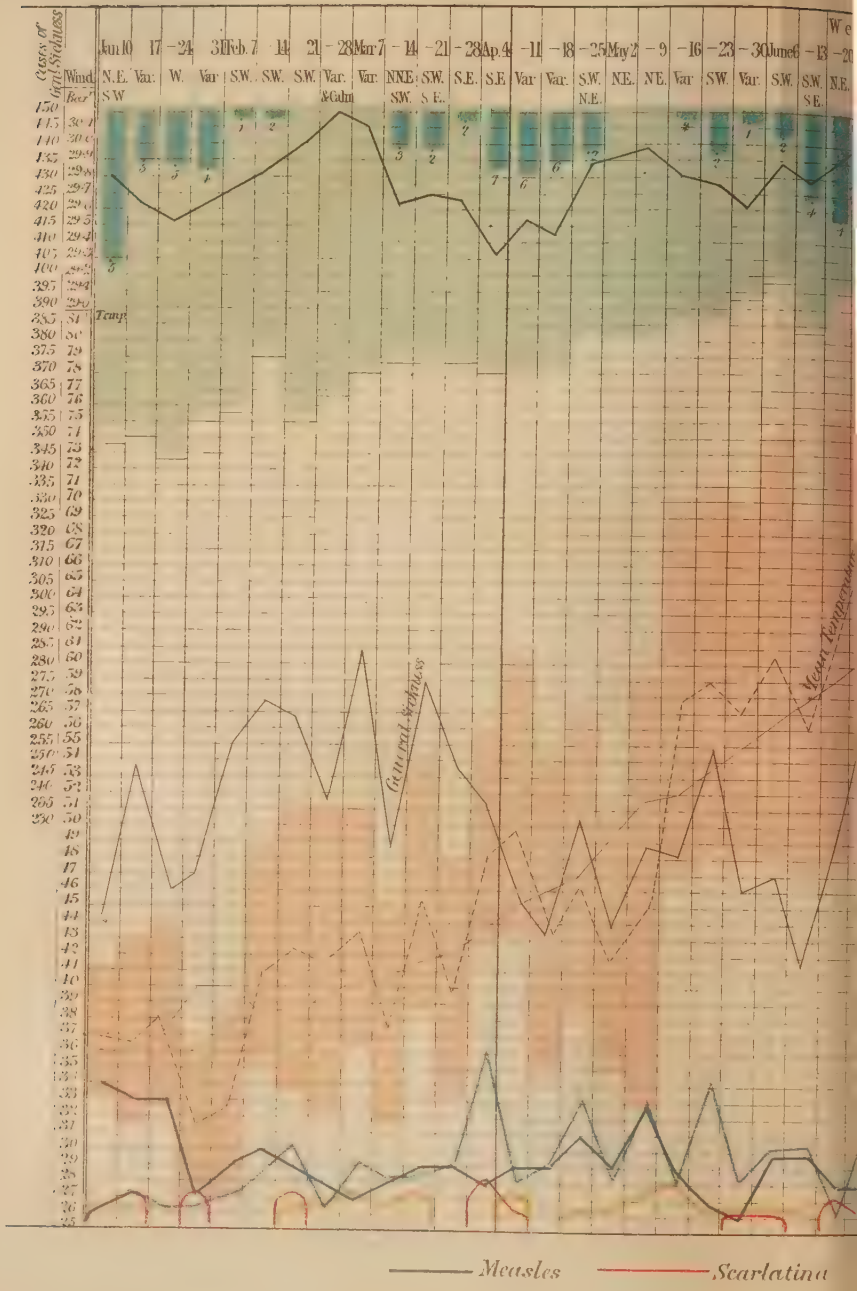
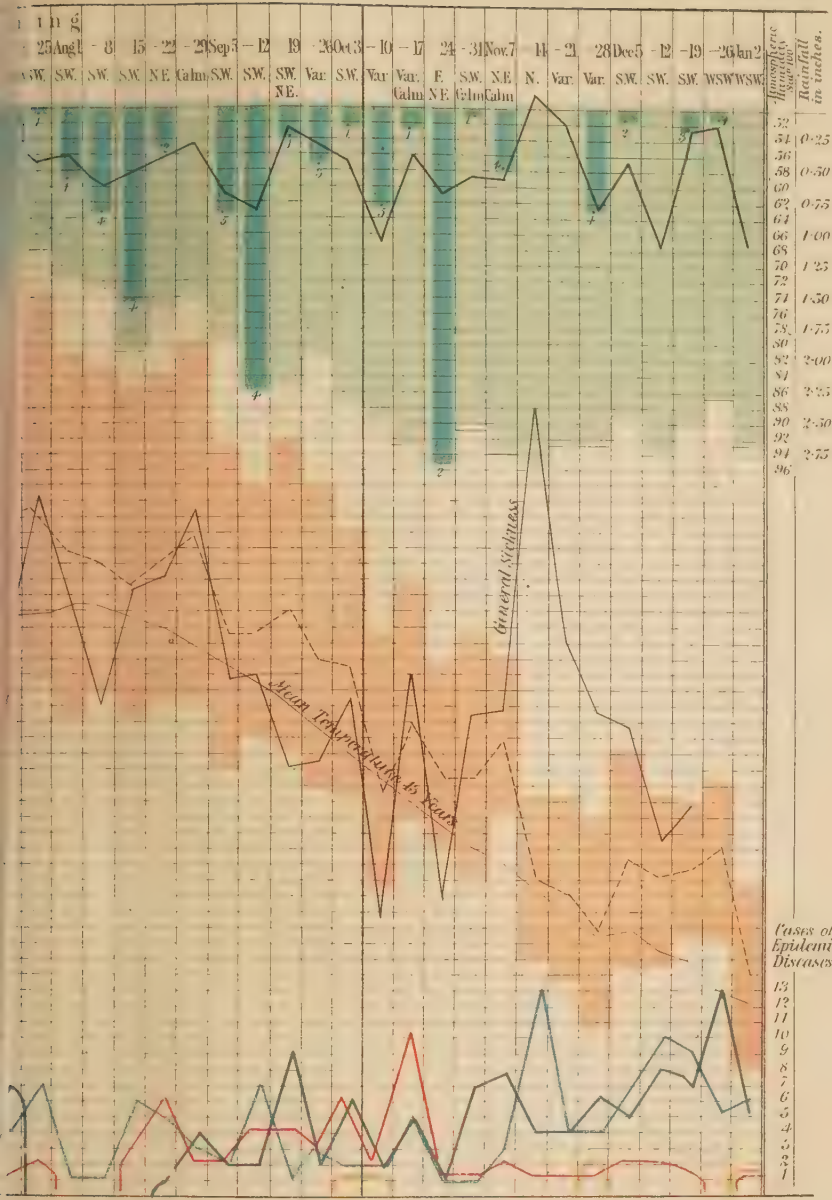

Cases of Scarlatina
Jan 10 17 24 31 Feb 7 14 21 28 Mar 7 14 21 28 Ap 4 11 18 25 May 2 9 16 23 30 June 6 13 20
Wind
Rain
Temp
General Sickness
Steam Temperature
Measles
Scarlatina



—*Small pox* ——— *Hooping Cough*

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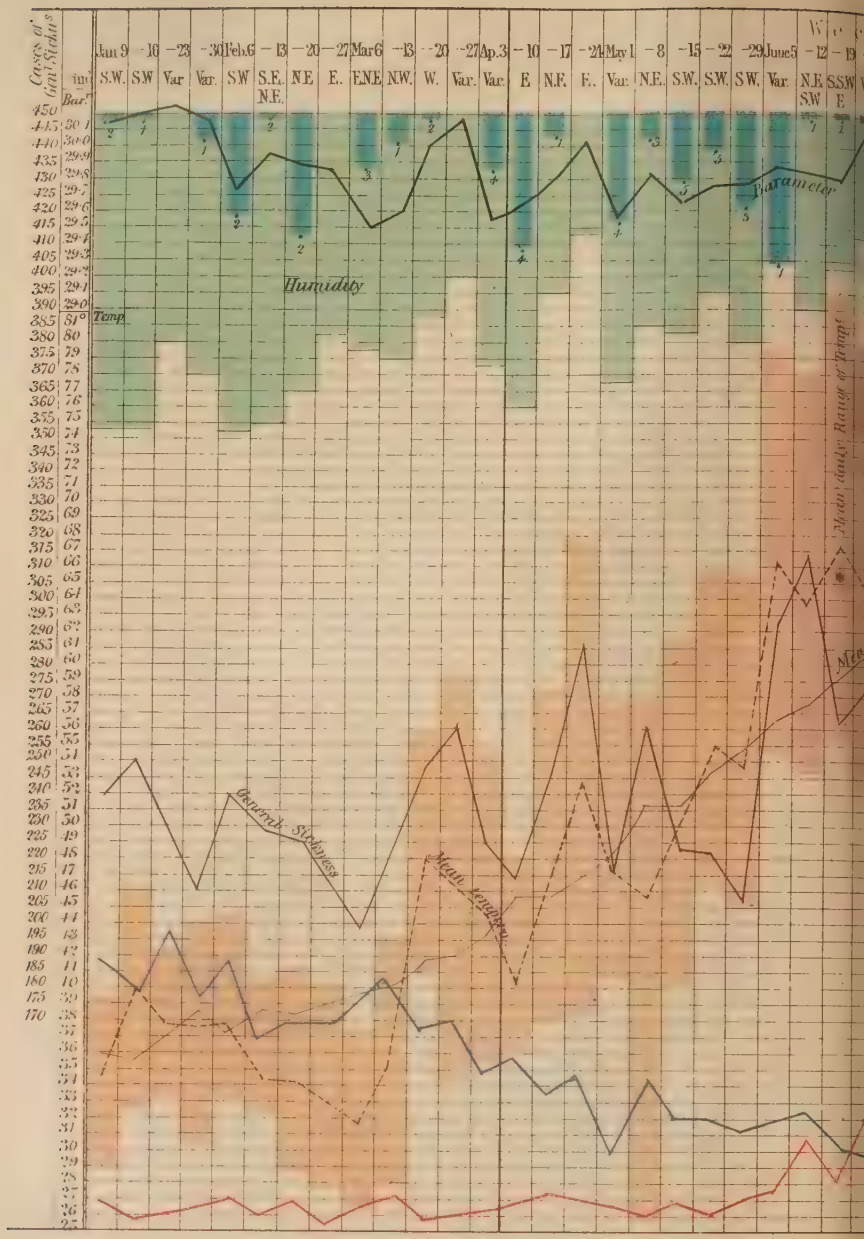
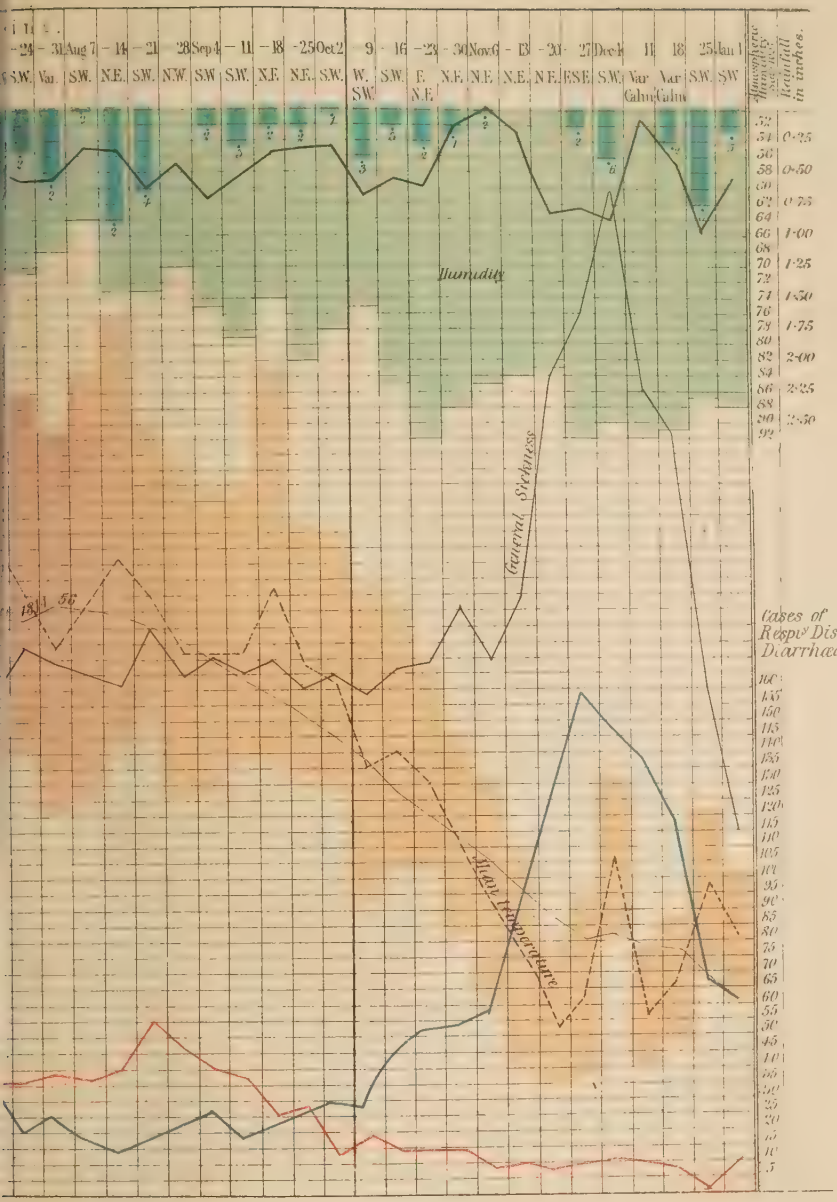

Cases of Diarrhœa & Cholera
Jan 9 S.W. 2 1
16 S.W 1 1
23 Var 1 1
30 Var. 1 1
Feb 6 S.W 2 2
13 S.E. N.E. 2 2
20 N.E 2 2
27 E. 3 1
Mar 6 E.N.E 3 1
13 N.W. 1 1
20 W. 2 2
27 Var. 4 1
Ap. 3 Var. 4 1
10 E 4 4
17 N.E. 1 1
24 E. 4 1
May 1 Var. 4 1
8 N.E. 3 1
15 S.W. 3 1
22 S.W. 3 1
29 S.W. 3 1
June 5 Var. 1 1
12 N.E. S.W. 1 1
19 S.S.W E 1 1
Bar.
Temp.
Humidity
Parameter
Mean daily Range of Temp.
Mean
Dewpoint Sickness
Mean Temperature
Diarrhœa



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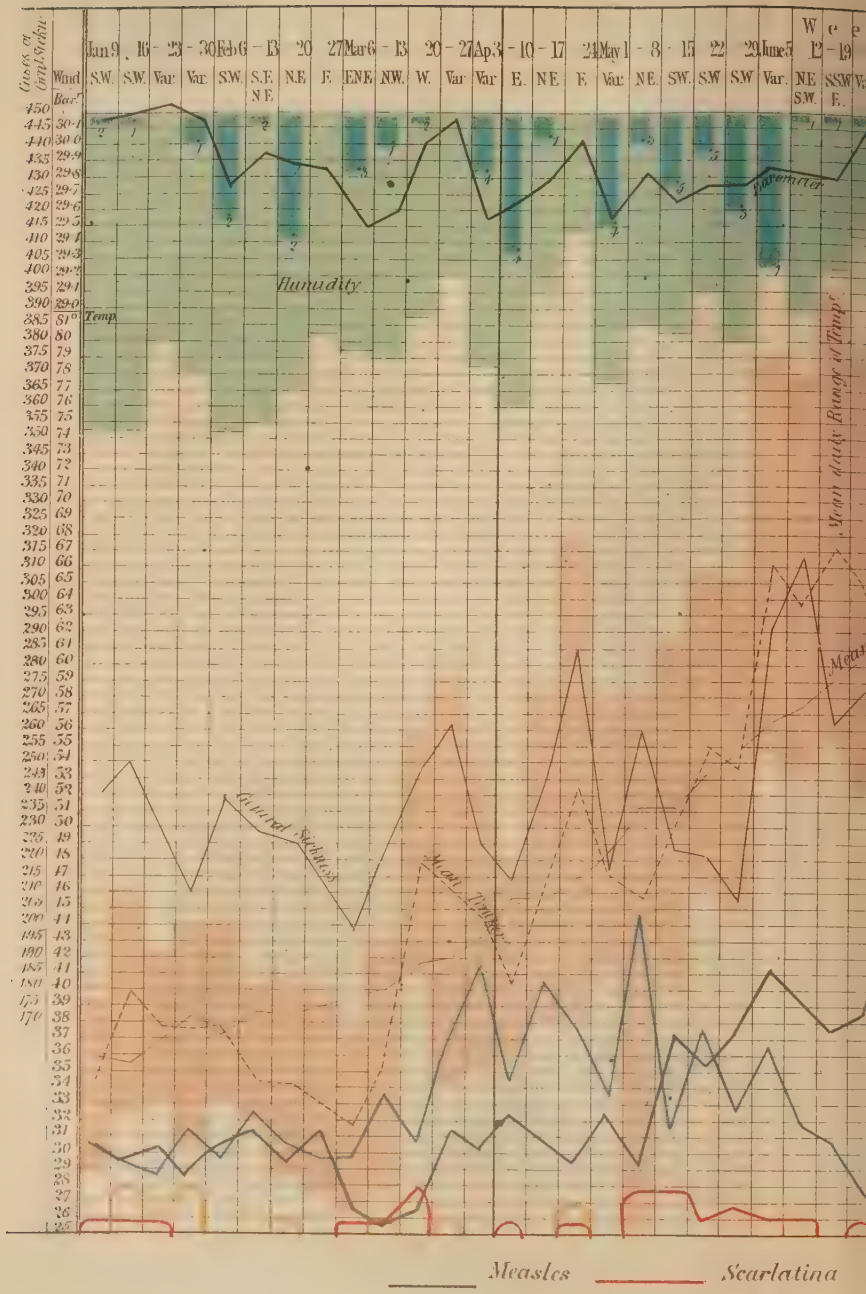
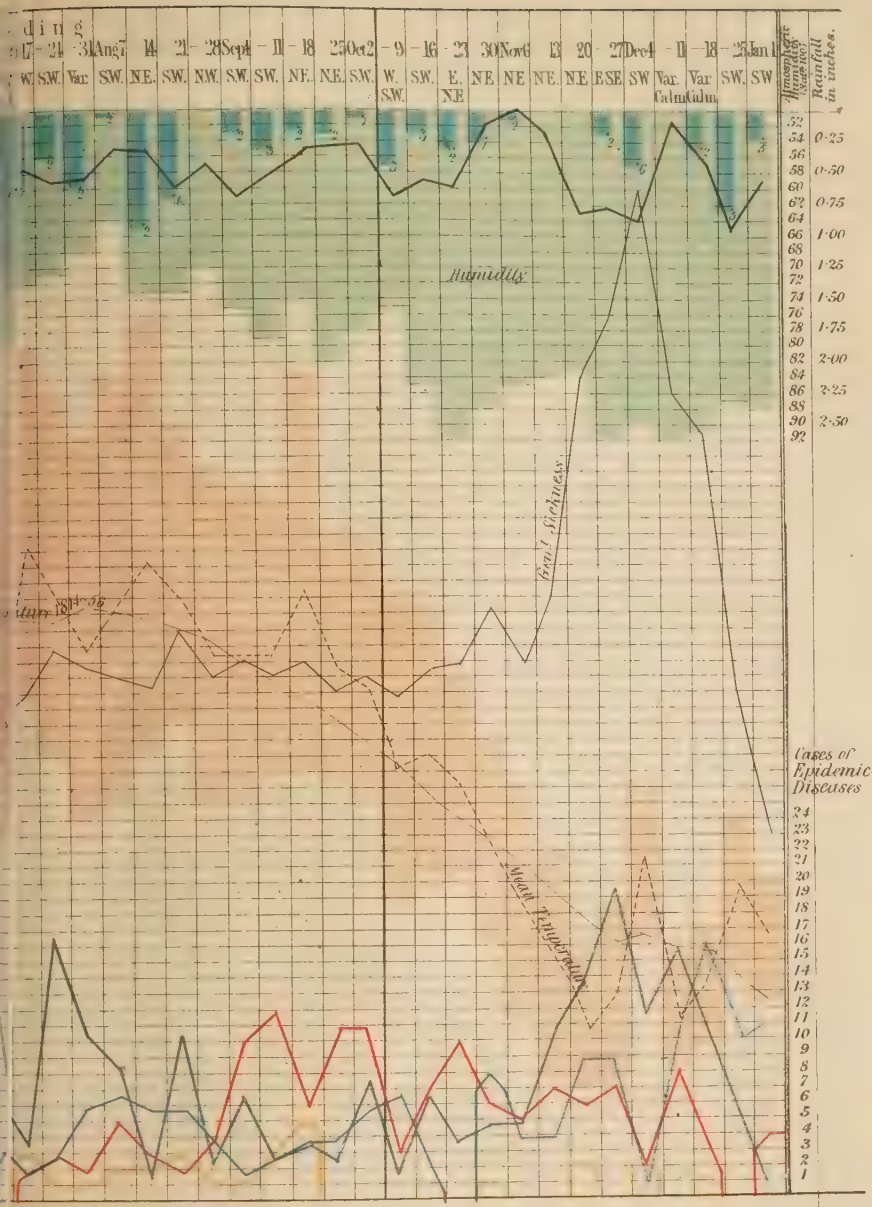

Cases of Disease
Wind
Bar.
Jan 9 16 23 30 Feb 6 13 20 27 Mar 6 13 20 27 Ap 3 10 17 24 May 1 8 15 22 29 June 5 12 19
S.W. S.W. Var Var S.W. S.E. N.E. N.E. E. E.N.E. N.W. W. Var Var E. N.E. E. Var N.E. S.W. S.W. S.W. Var N.E. S.W. S.S.W. E.
Barometer
Humidity
Temp.
Daily Range of Temp.
General Sickness
Measles
Scarlatina



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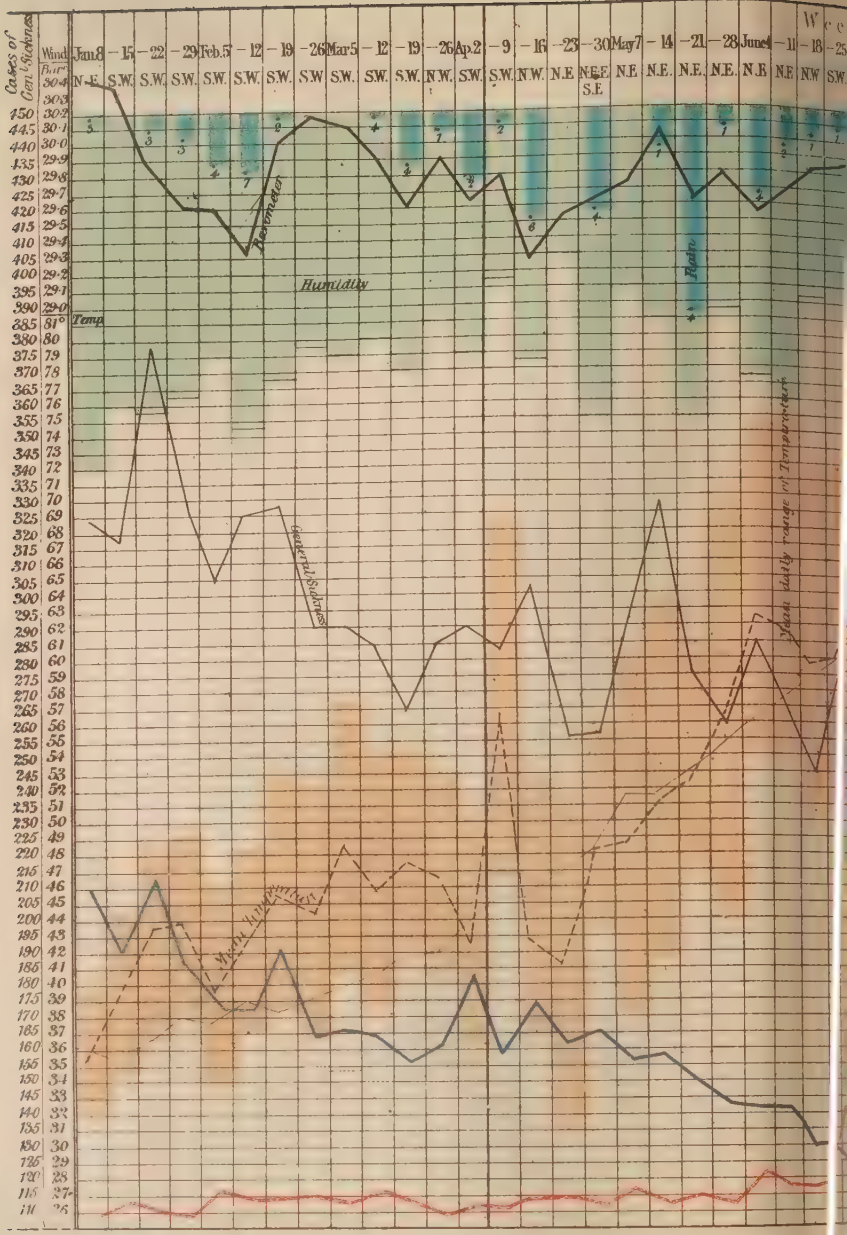
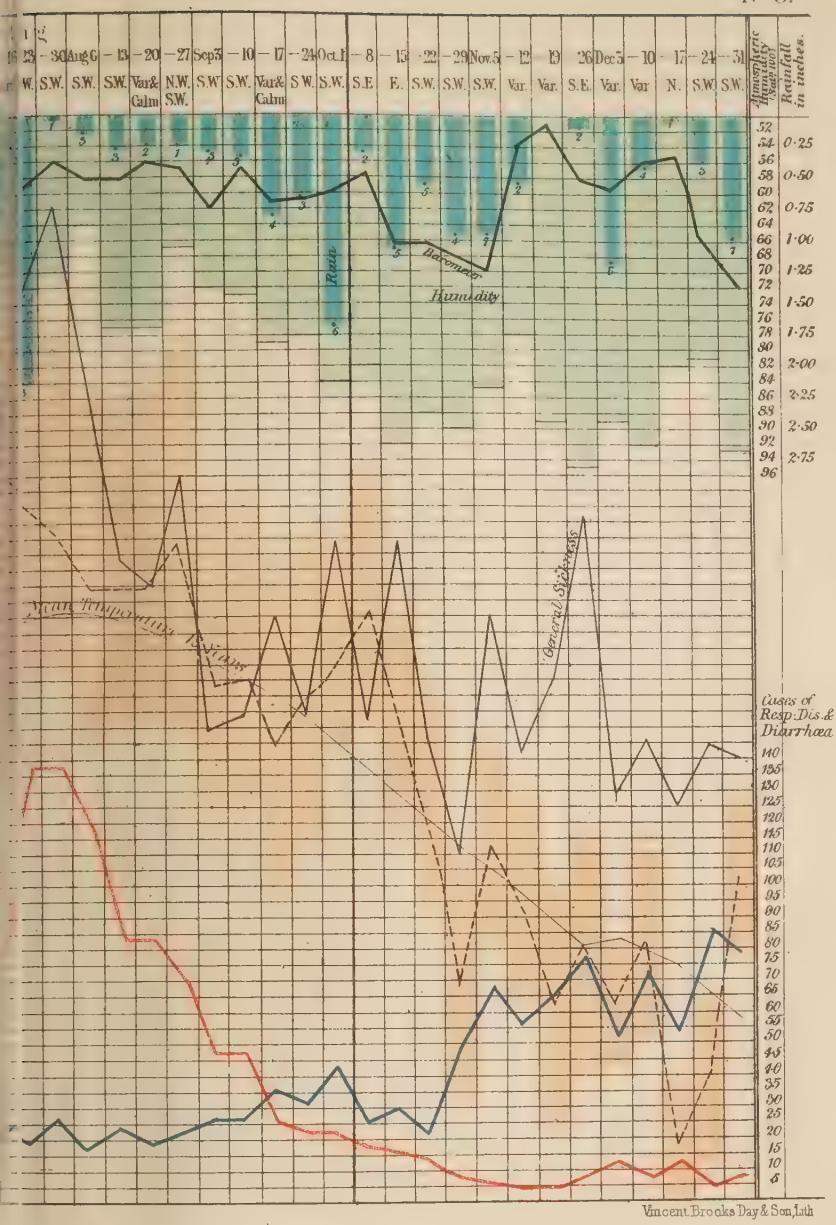
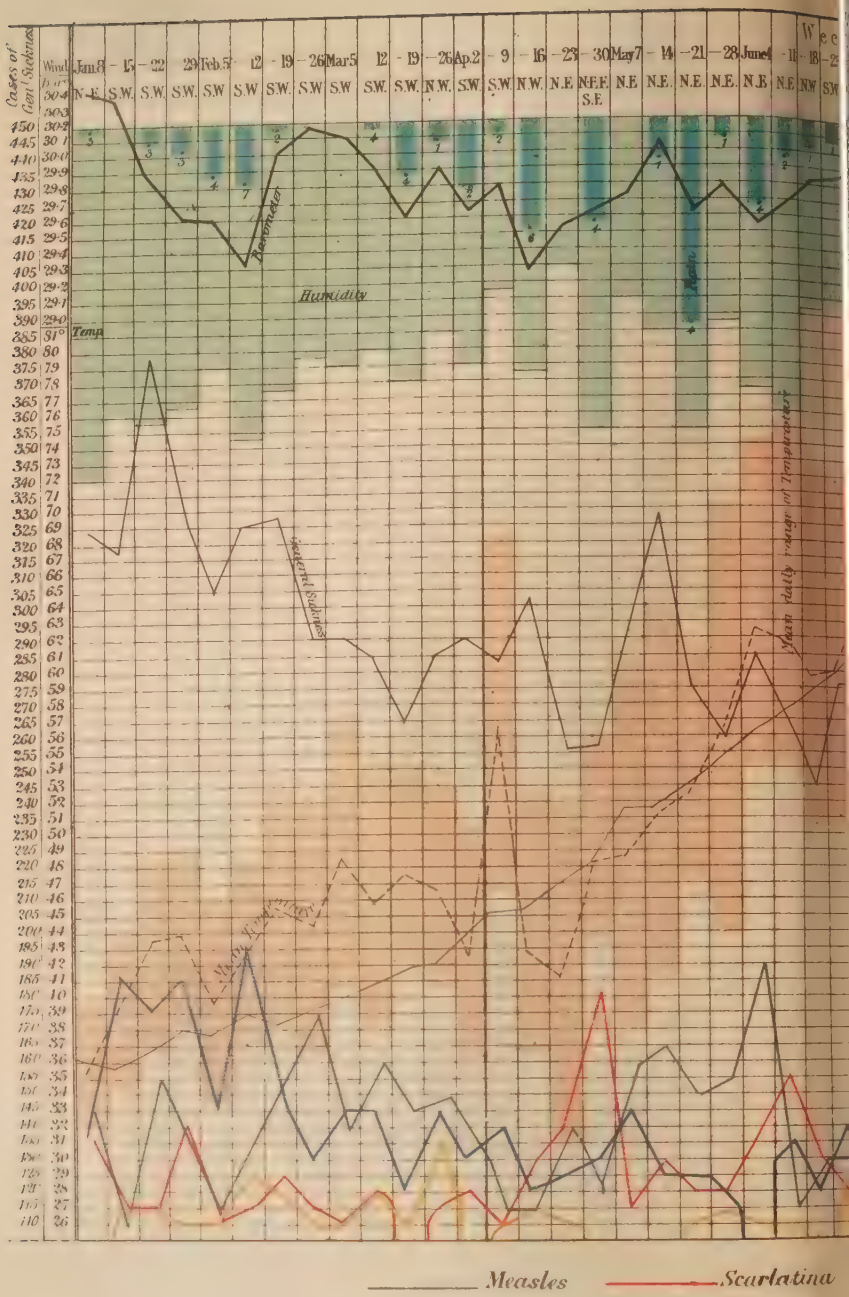
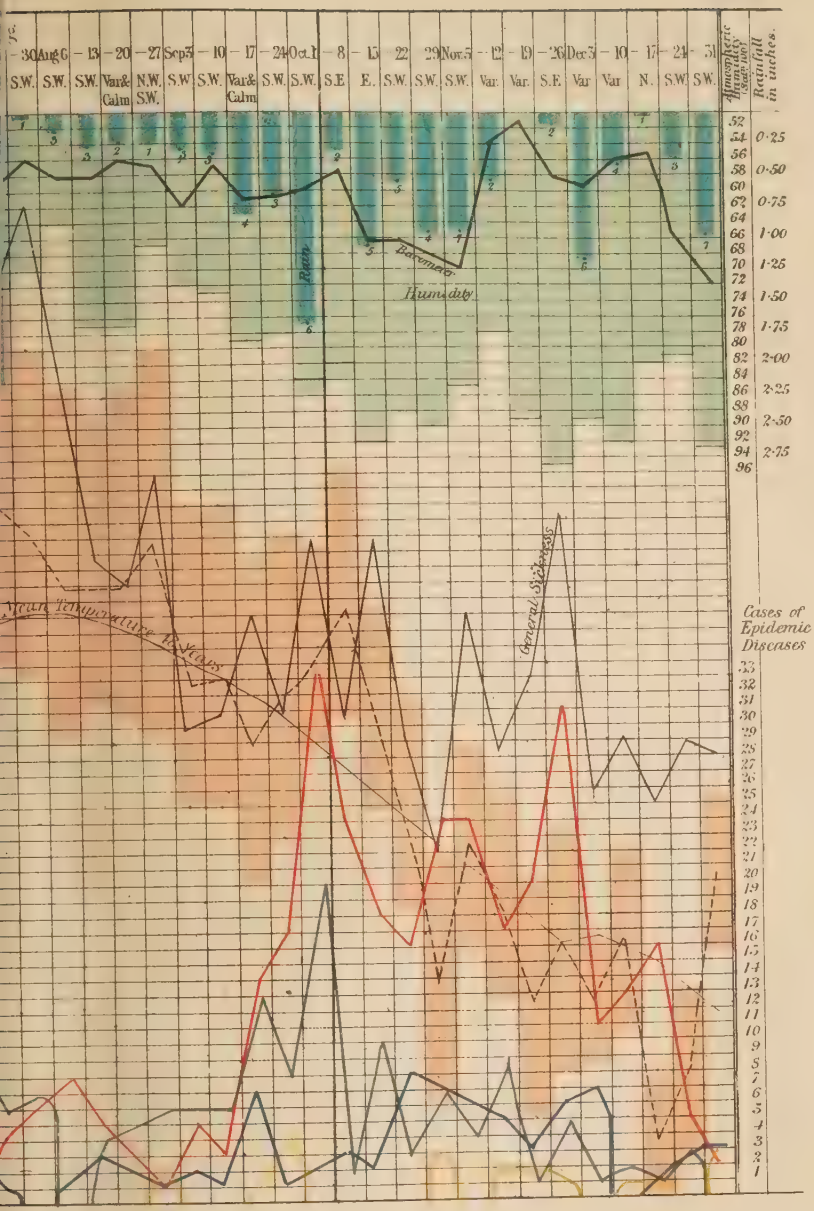

Cases of Cholera
Wind
Barr.
Jan 8 – 15 – 22 – 29 Feb 5 – 12 – 19 – 26 Mar 5 – 12 – 19 – 26 Ap 2 – 9 – 16 – 23 – 30 May 7 – 14 – 21 – 28 June 4 – 11 – 18 – 25
N.E. S.W. S.W. S.W. S.W. S.W. S.W. S.W. S.W. S.W. S.W. N.W. S.W. S.W. N.W. N.E. N.E. S.E. N.E. N.E. N.E. N.E. N.E. N.E. N.W. S.W.
Barometer
Humidity
Temp.
Rain
General Statistics
Mean daily range of Temperature
Mean Humidity
Diarrh



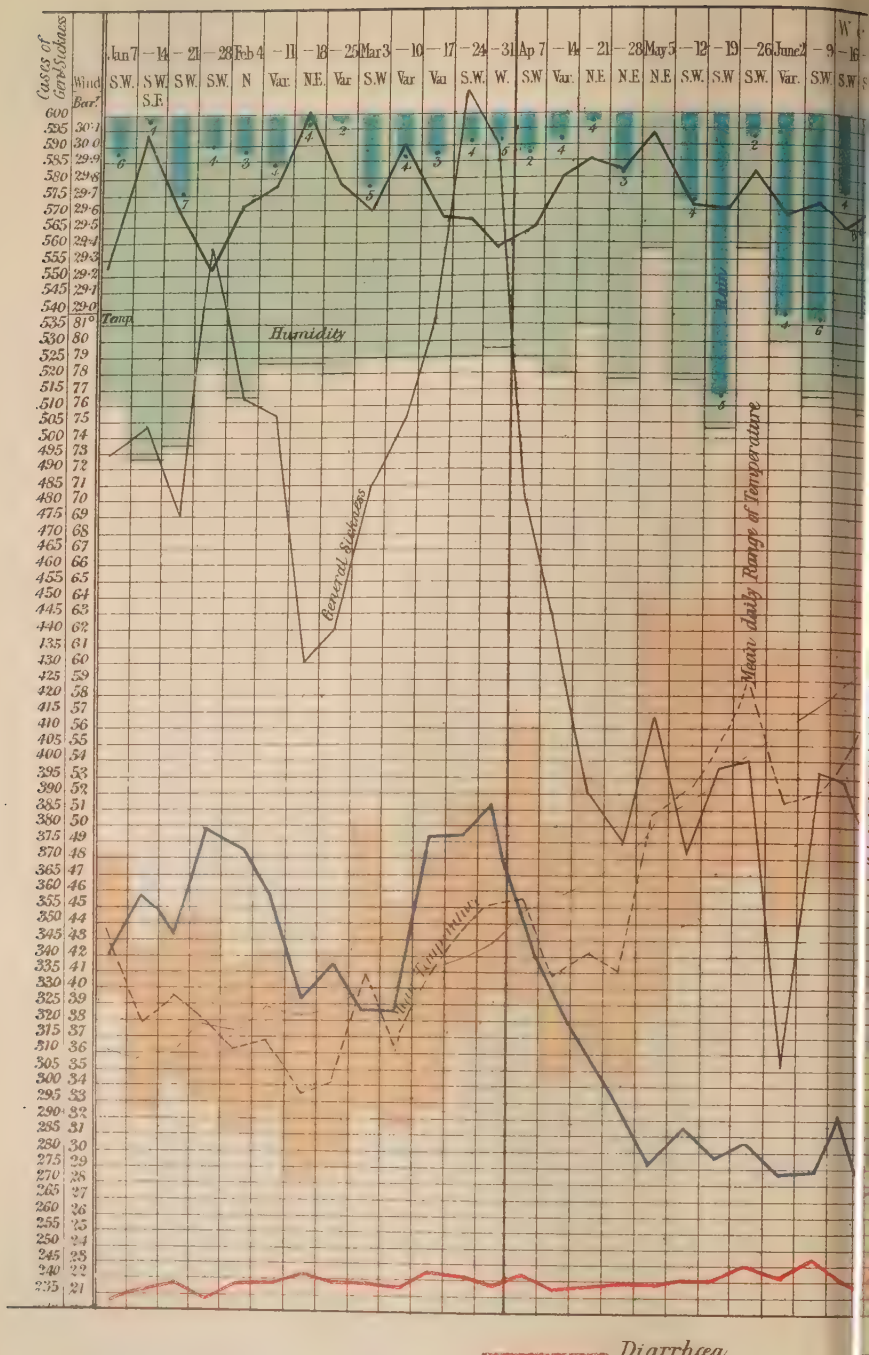
— — *Respiratory Diseases*

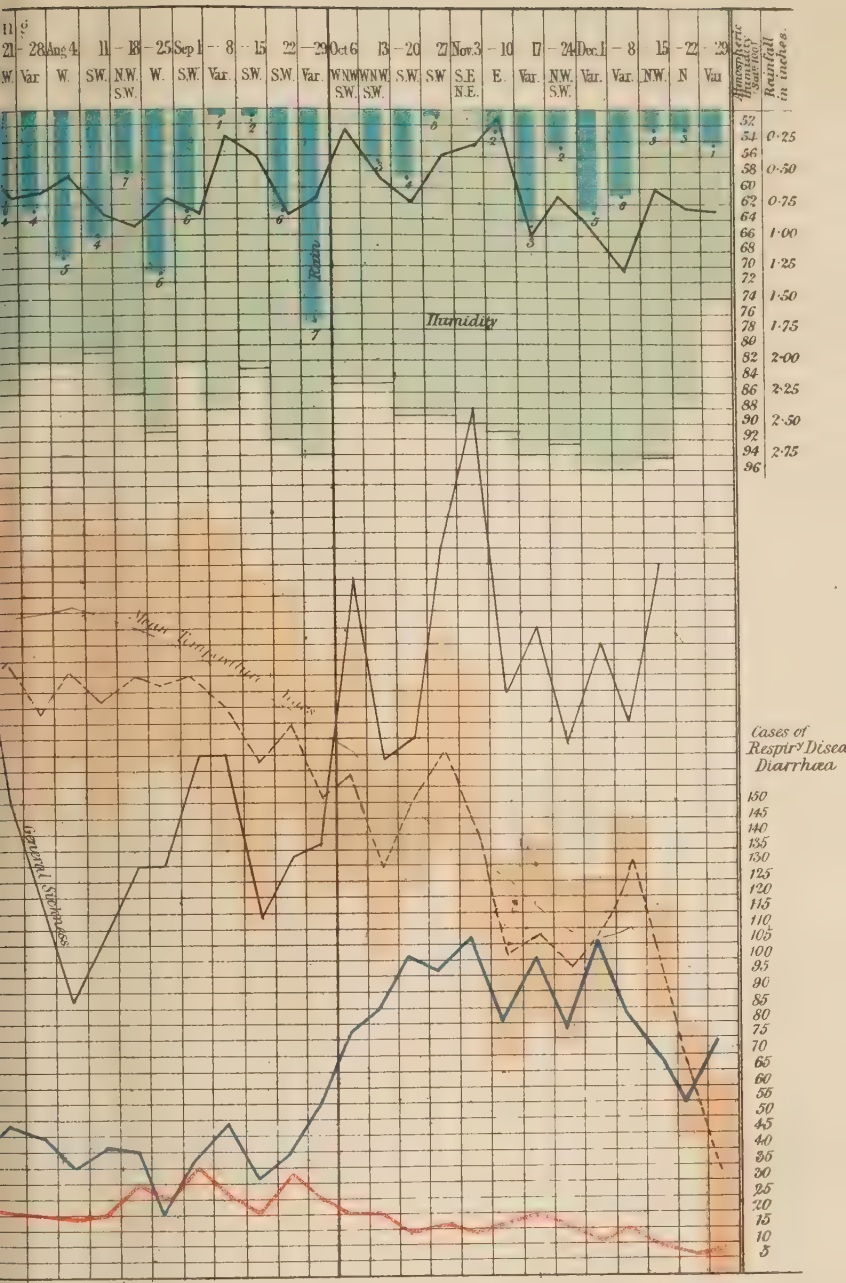

Cases of Gen.l Sickness
Wind
Jan.8 – 15 – 22 – 29 Feb.5 – 12 – 19 – 26 Mar5 – 12 – 19 – 26 Ap.2 – 9 – 16 – 23 – 30 May7 – 14 – 21 – 28 June4 – 11 – 18 – 2
N.E. S.W. S.W. S.W. S.W. S.W. S.W. S.W. S.W. S.W. S.W. N.W. S.W. S.W. N.W. N.E. N.E.E. S.E. N.E. N.E. N.E. N.E. N.E. N.E. N.W. S.W.
Barometer
Humidity
Temp.
Reported Sickness
Mean daily range of Temperature
Mean Temperature
Measles
Scarlatina


Wk. 30 Aug 6 13 20 27 Sep 3 10 17 24 Oct 1 8 15 22 29 Nov 5 12 19 26 Dec 3 10 17 24 31
S.W. S.W. S.W. Var & Calm N.W. S.W. S.W. S.W. Var & Calm S.W. S.W. S.E E. S.W. S.W. S.W. Var Var S.E Var Var N. S.W. S.W.
Atmospheric Humidity Saturation
Rainfall in inches
52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96
0·25 0·50 0·75 1·00 1·25 1·50 1·75 2·00 2·25 2·50 2·75
Rain
Barometer
Humidity
Mean Temperature Excess
General Sickness
Cases of Epidemic Diseases
33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

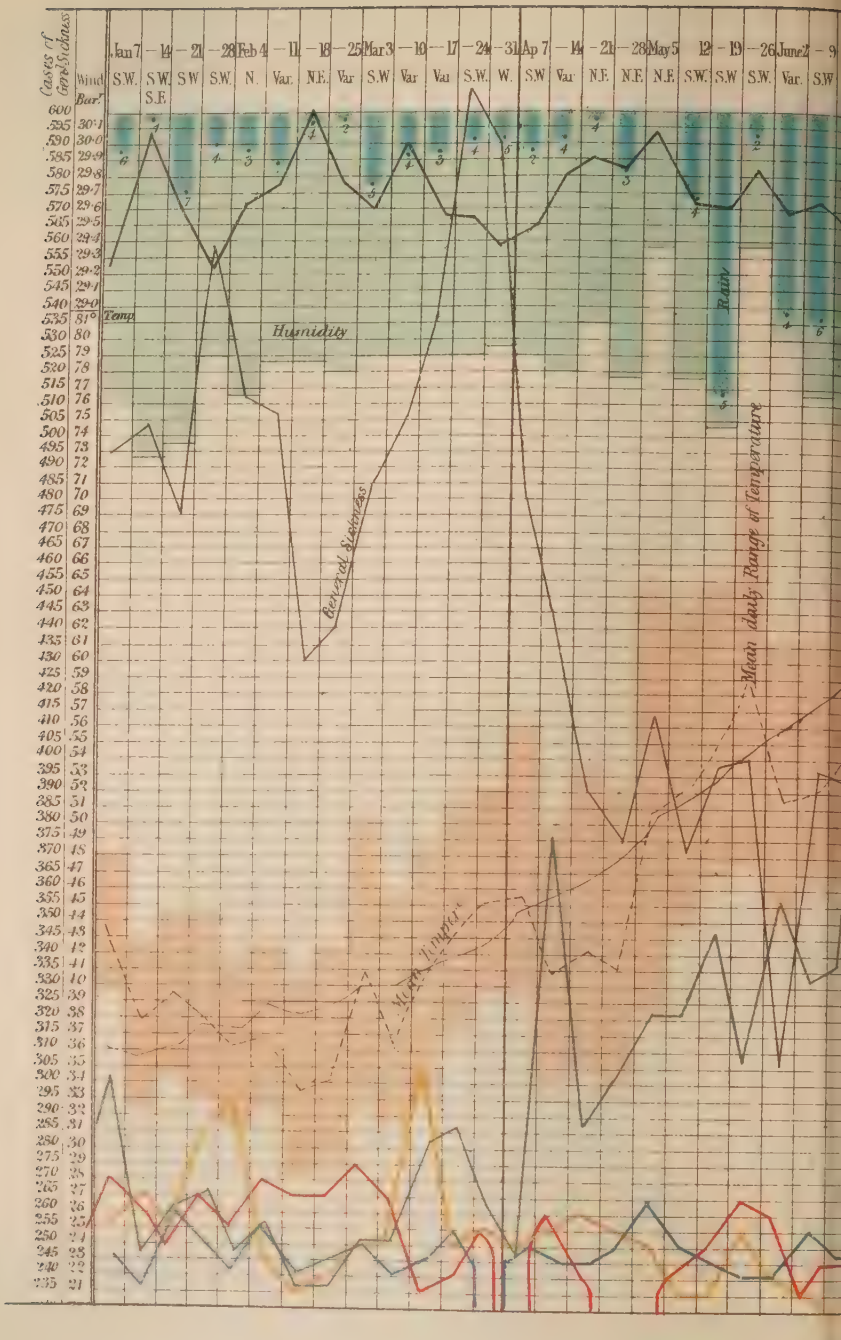
Small pox ——— Hooping Cough

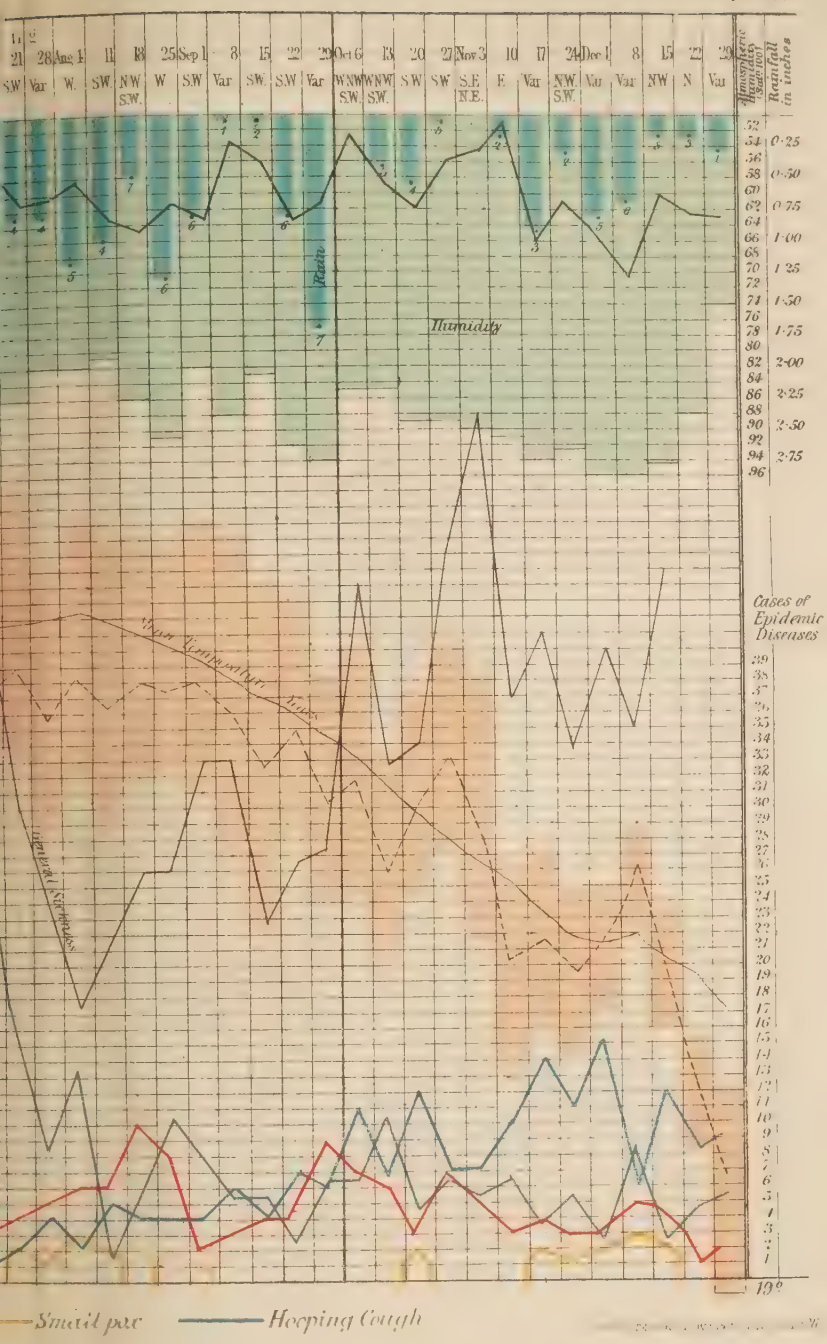
Vincent Brooks, Day & Son Lith., London W.C

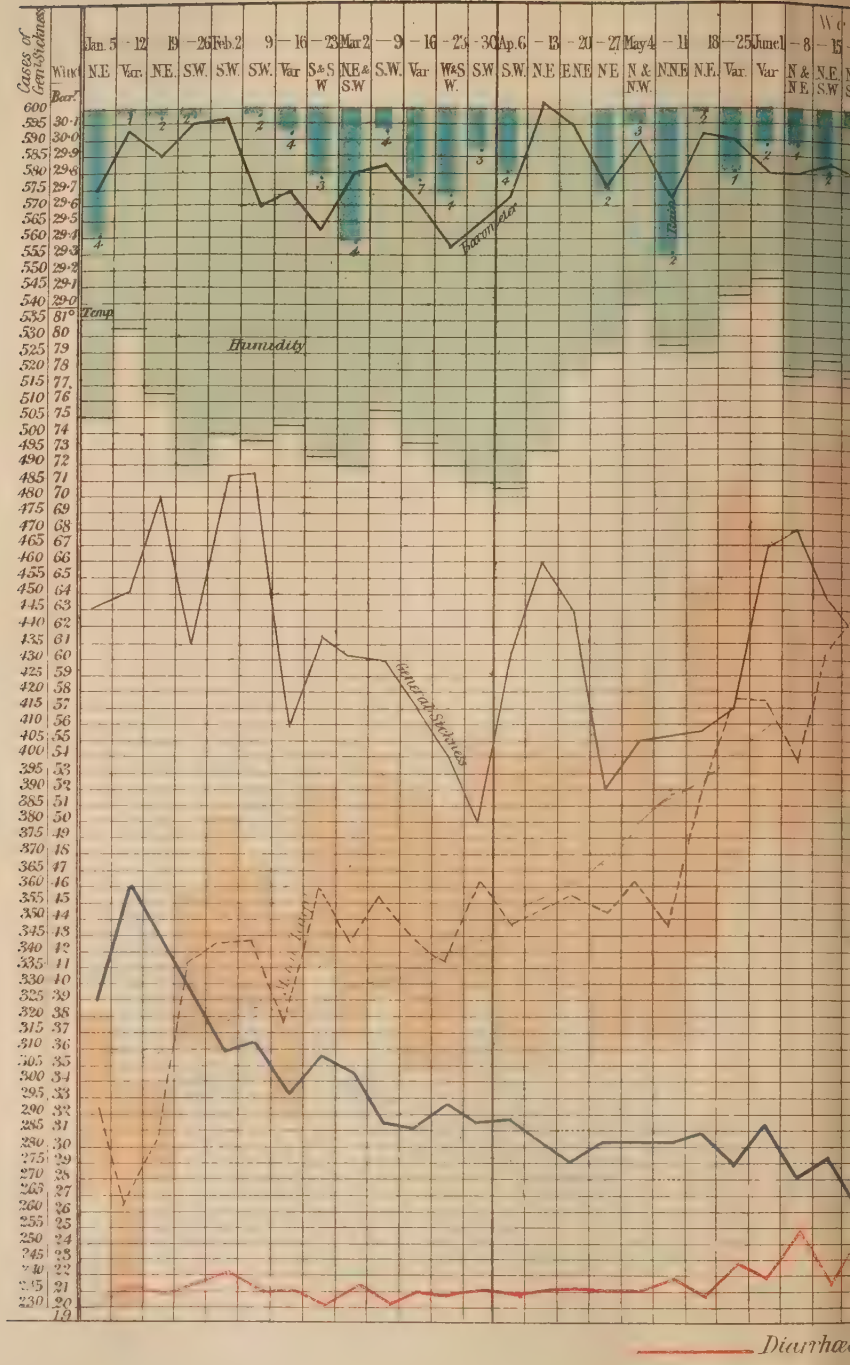

Cases of Diarrhœa
Wind
Bar.
Temp.
Humidity
General Sickness
Mean daily Range of Temperature
Mean Temperature
Jan 7 — 14 — 21 — 28 Feb 4 — 11 — 18 — 25 Mar 3 — 10 — 17 — 24 — 31 Ap 7 — 14 — 21 — 28 May 5 — 12 — 19 — 26 June 2 — 9 — 16
S.W. S.W. S.E. S.W. S.W. N Var. N.E. Var S.W Var Var S.W. W. S.W Var. N.E N.E N.E S.W. S.W S.W. Var. S.W S.W
Diarrhœa

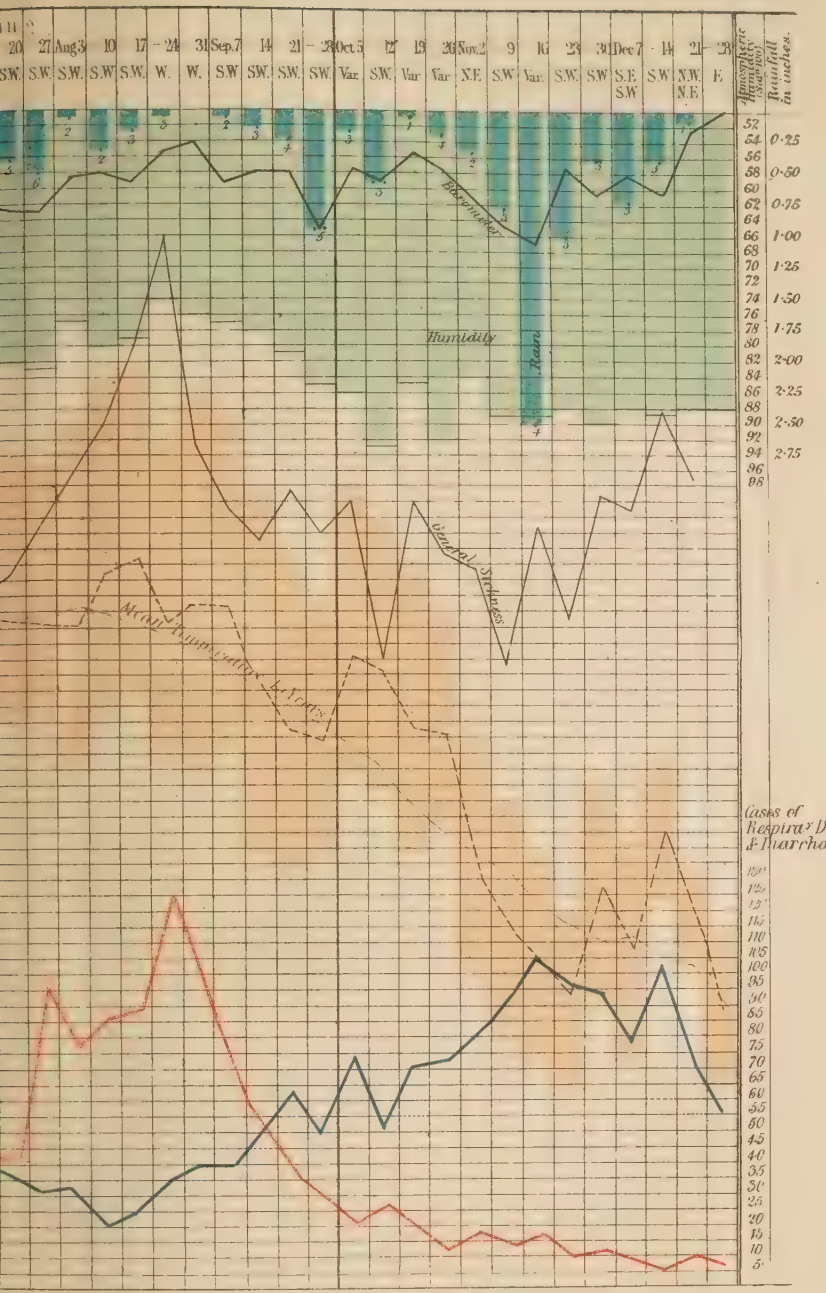


Vincent Brooks, Day & Son, Lith. London W.C.


Cases of Deaths
Wind
Bar.
Temp.
Humidity
Rain
Several Sleepless
Mean daily Range of Temperature
Mean Temper.
Jan 7 – 14 – 21 – 28 Feb 4 – 11 – 18 – 25 Mar 3 – 10 – 17 – 24 – 31 Ap 7 – 14 – 21 – 28 May 5 – 12 – 19 – 26 June 2 – 9
S.W. S.W. S.E. S.W S.W N. Var. N.E. Var S.W Var Var S.W. W. S.W Var N.E. N.E. N.E. S.W. S.W S.W. Var. S.W
Measles
Scarlatina

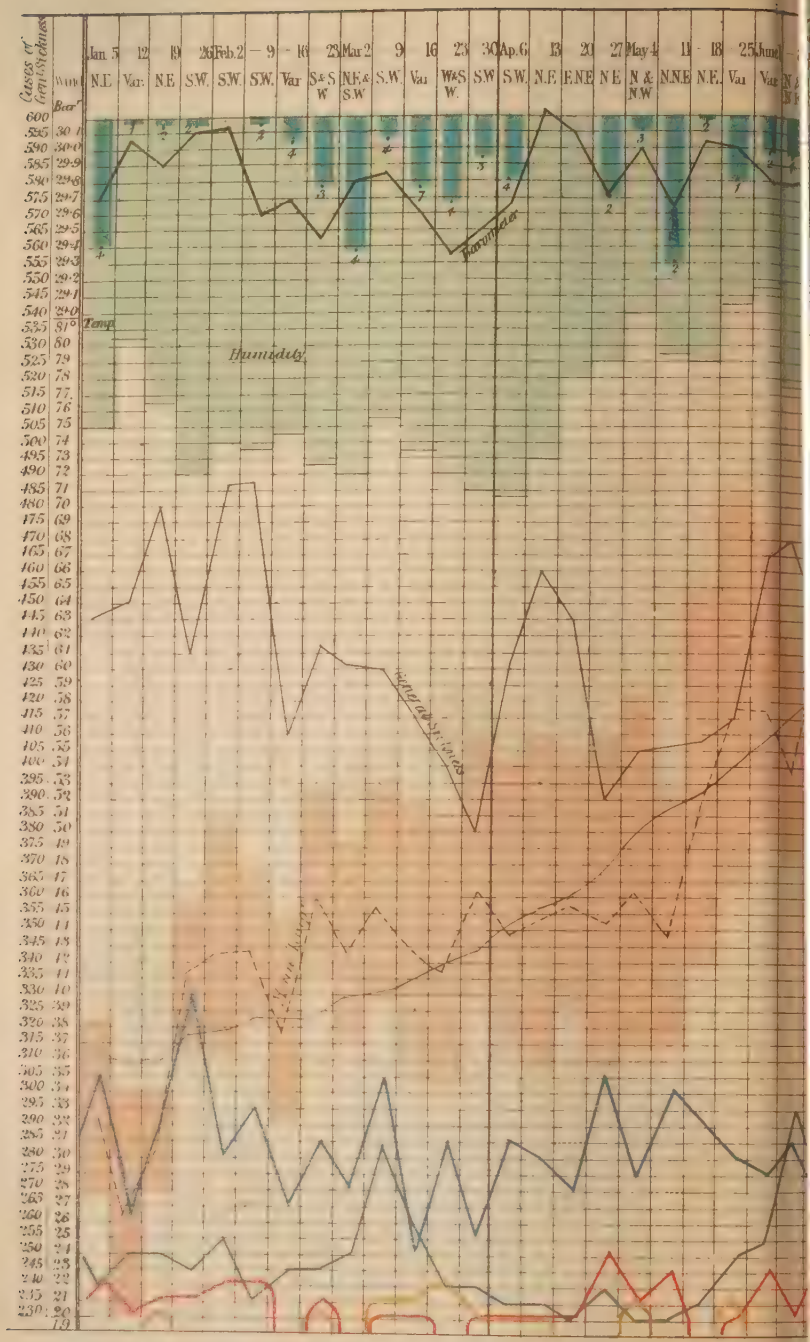

Humidity
Rain
Cases of Epidemic Diseases
Rainfall in inches
Hooping Cough

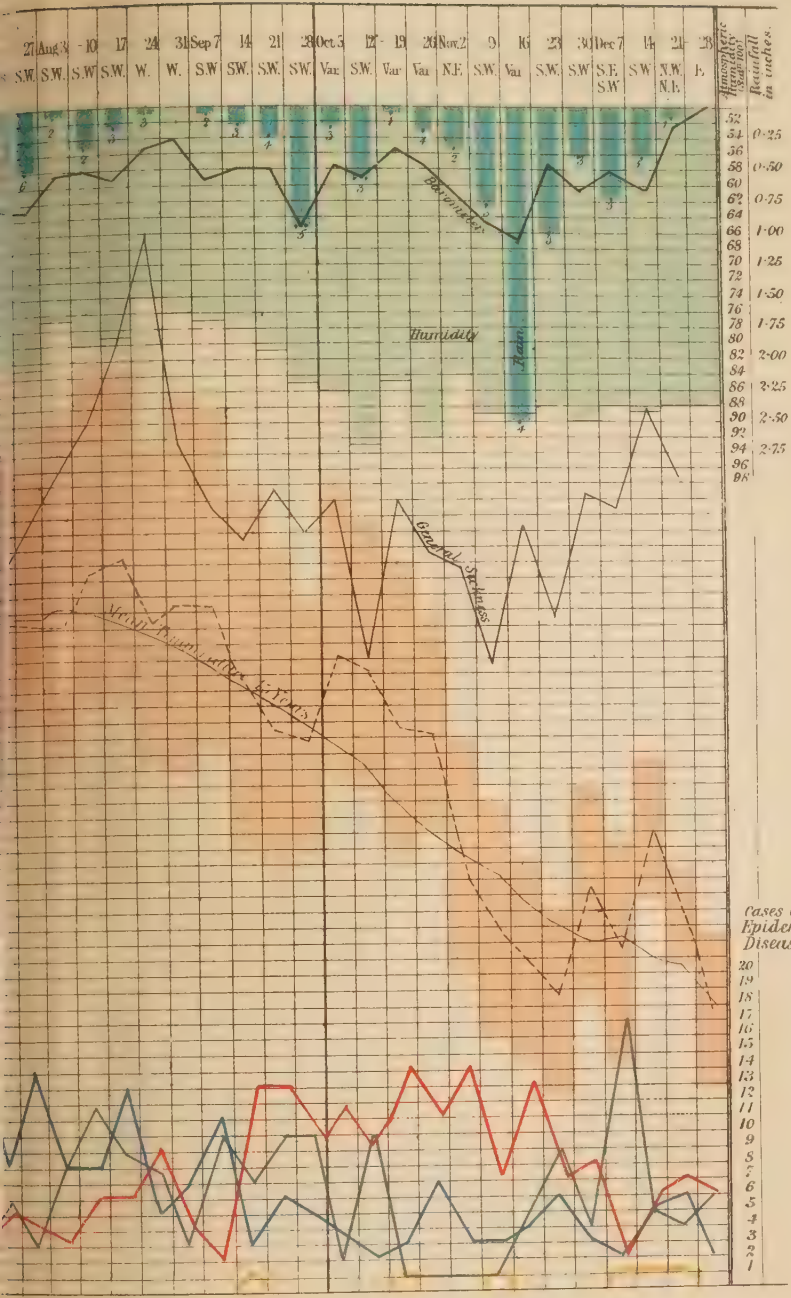

Cases of Cerebro Spinal Sickness
Jan. 5 - 12 19 - 26 Feb. 2 9 - 16 - 23 Mar 2 - 9 - 16 - 23 - 30 Ap. 6 - 13 - 20 - 27 May 4 - 11 18 - 25 June 1 - 8 - 15
Wind
N.E Var. N.E. S.W. S.W. S.W. Var S.& S W N.E.& S.W S.W. Var W.& S W. S.W S.W. N.E E.N.E N.E. N.& N.W. N.N.E N.E. Var. Var N.& N.E. N.E. S.W
Barr.
Temp.
Humidity
Barometer
Rain
Diurnal Statistics
Diarrhœa

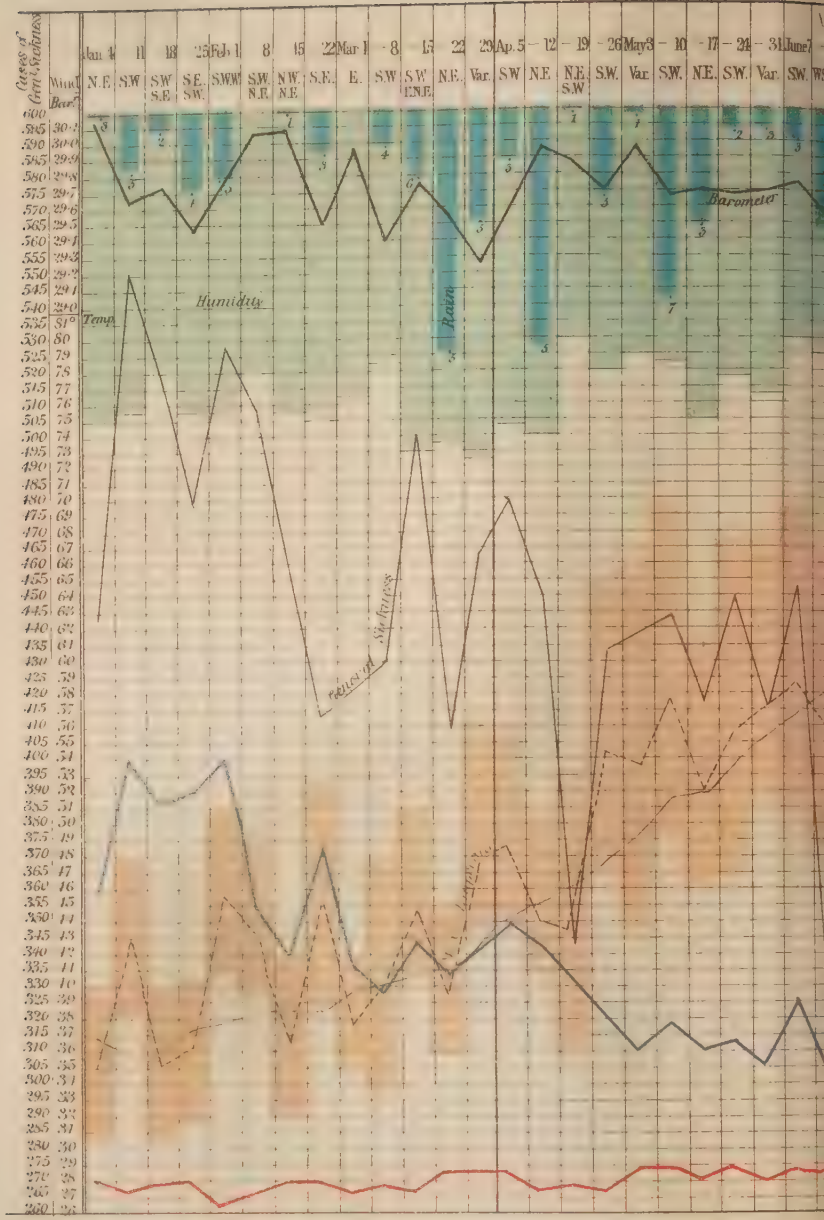


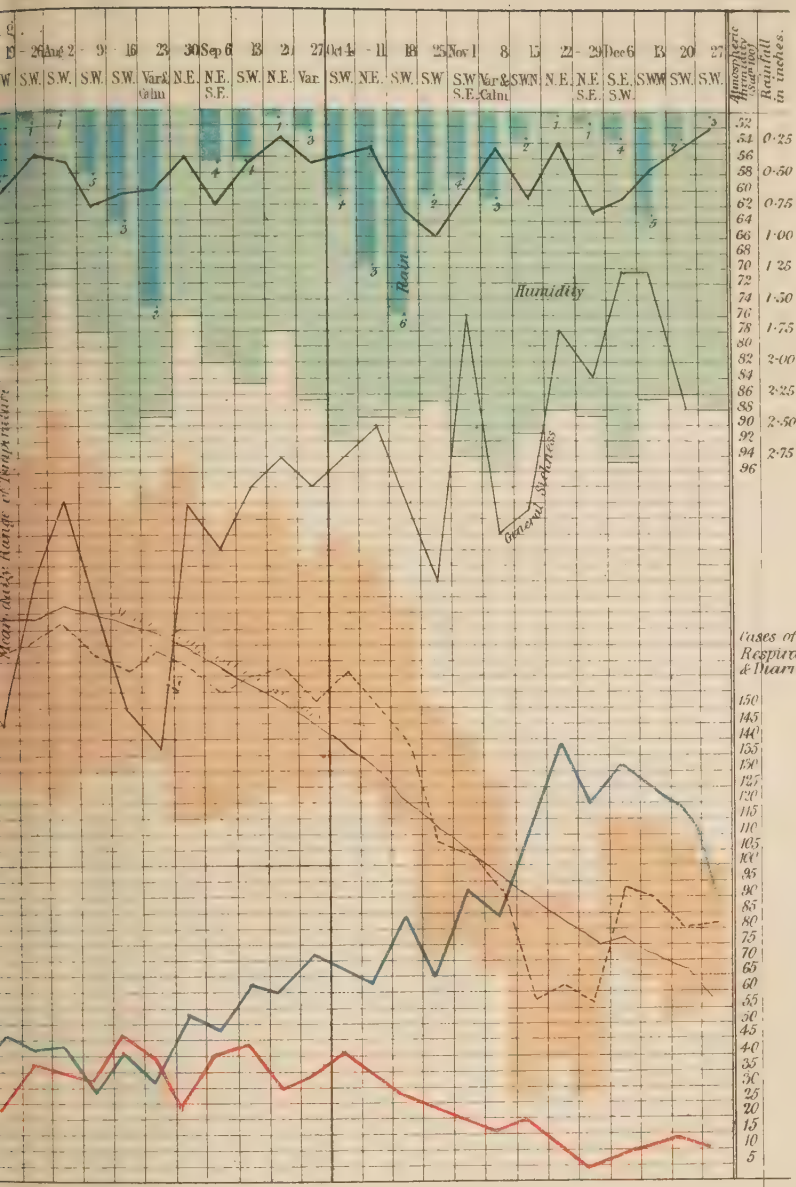
Respiratory Diseases

Vincent Brooks, Day & Son, Lith. London W.C.


Jan. 5 12 19 26 Feb. 2 — 9 — 16 23 Mar. 2 9 16 23 30 Ap. 6 13 20 27 May 4 11 18 25 June
Wind
N.E. Var. N.E. S.W. S.W. S.W. Var S. & S. W. N.E. & S.W. S.W. Var W. & S. W. S.W. S.W. N.E. E.N.E. N.E. N. & N.W. N.N.E. N.E. Var. Var.
Barr
Temp
Humidity
Variation
Intensity of Scarlatina
Deaths
Measles
Scarlatina


Atmospheric Humidity
Rainfall in inches
Barometer
Humidity
Rain
General Sickness
Cases of Epidemic Diseases.
Small pox
Hooping Cough

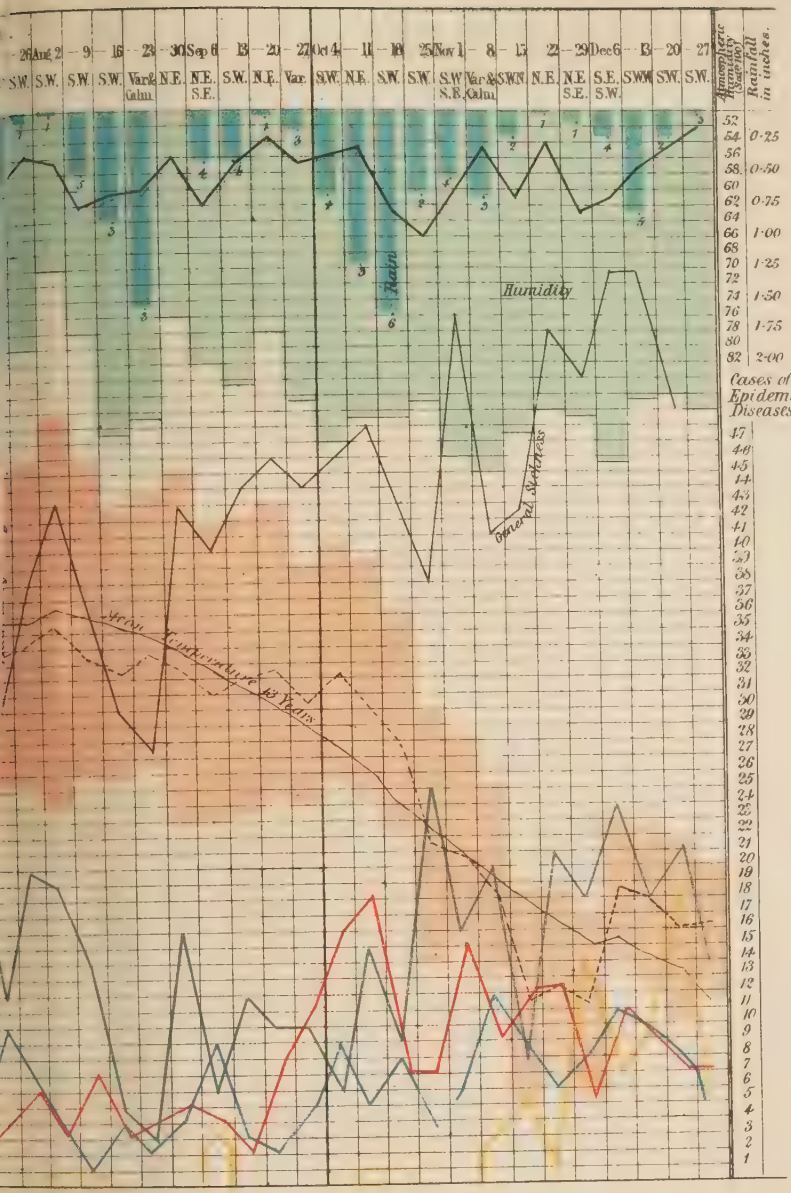

Jan. 4
11
18
25
Feb. 1
8
15
22
Mar. 1
8
15
22
29
Ap. 5
12
19
26
May 3
10
17
24
31
June 7
Wind
N.E.
S.W.
S.W. S.E.
S.E. S.W.
S.W.
S.W. N.E.
N.W. N.E.
S.E.
E.
S.W.
S.W. E.N.E.
N.E.
Var.
S.W.
N.E.
N.E. S.W.
S.W.
Var.
S.W.
N.E.
S.W.
Var.
S.W.
Barom.
Barometer
Rain
Humidity
Temp.
Diarrh


Aug 2 9 16 23 30 Sep 6 13 20 27 Oct 4 11 18 25 Nov 1 8 15 22 29 Dec 6 13 20 27
S.W. S.W. S.W. S.W. Var & Calm N.E. N.E. S.E. S.W. N.E. Var S.W. N.E. S.W. S.W. S.W. S.E. Var & Calm S.W. N.E. N.E. S.E. S.E. S.W. S.W. S.W. S.W.
Atmospheric Pressure at 10 a.m.
Rainfall in inches.
52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96
0·25 0·50 0·75 1·00 1·25 1·50 1·75 2·00 2·25 2·50 2·75
Rain
Humidity
General Sickness
Mean daily Range of Temperature
Cases of Respiry & Diarrhœa
150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5

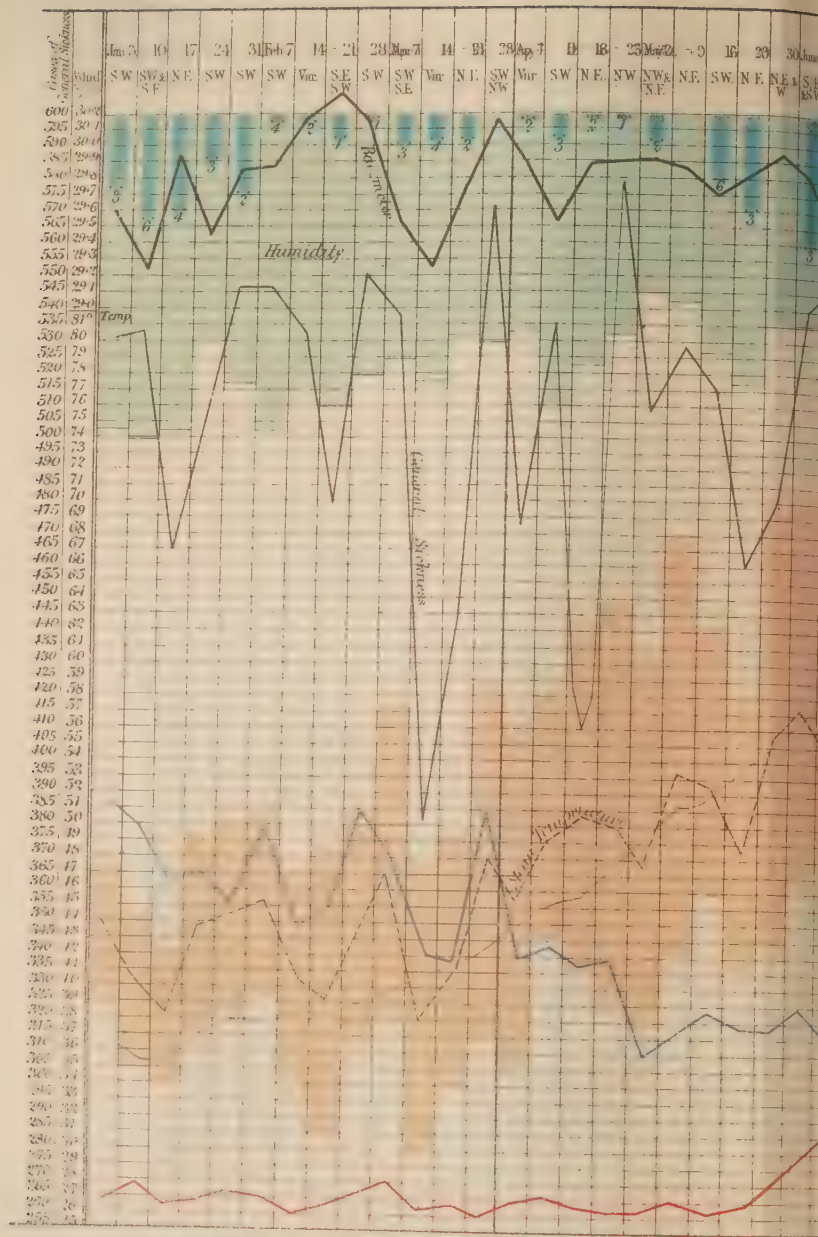
Respiratory Diseases

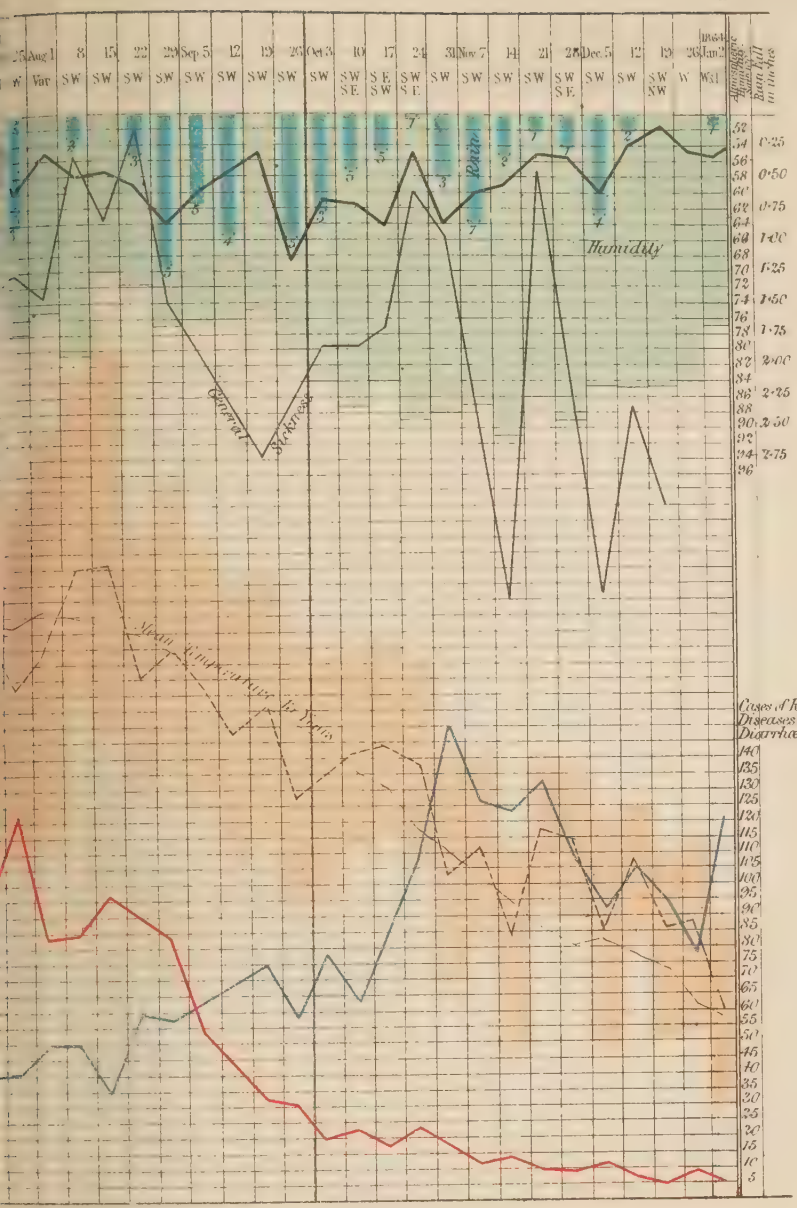
Vincent Brooks Day & Son, Lith. London W.C.

Jan 4
11
18
25
Feb 1
8
15
22
Mar 1
8
15
22
29
Ap. 5
12
19
26
May 3
10
17
24
31
June
N.E.
S.W
S.W. S.E.
S.E. S.W
S.W.W
S.W. S.E.
N.W. N.E.
S.E.
E.
S.W.
S.W. E.N.E.
N.E.
Var.
S.W
N.E.
N.E. S.W
S.W.
Var.
S.W.
N.E.
S.W.
Var
S.W
Barom.
Humidity
Temp.
Rain
Measles
Scarlat

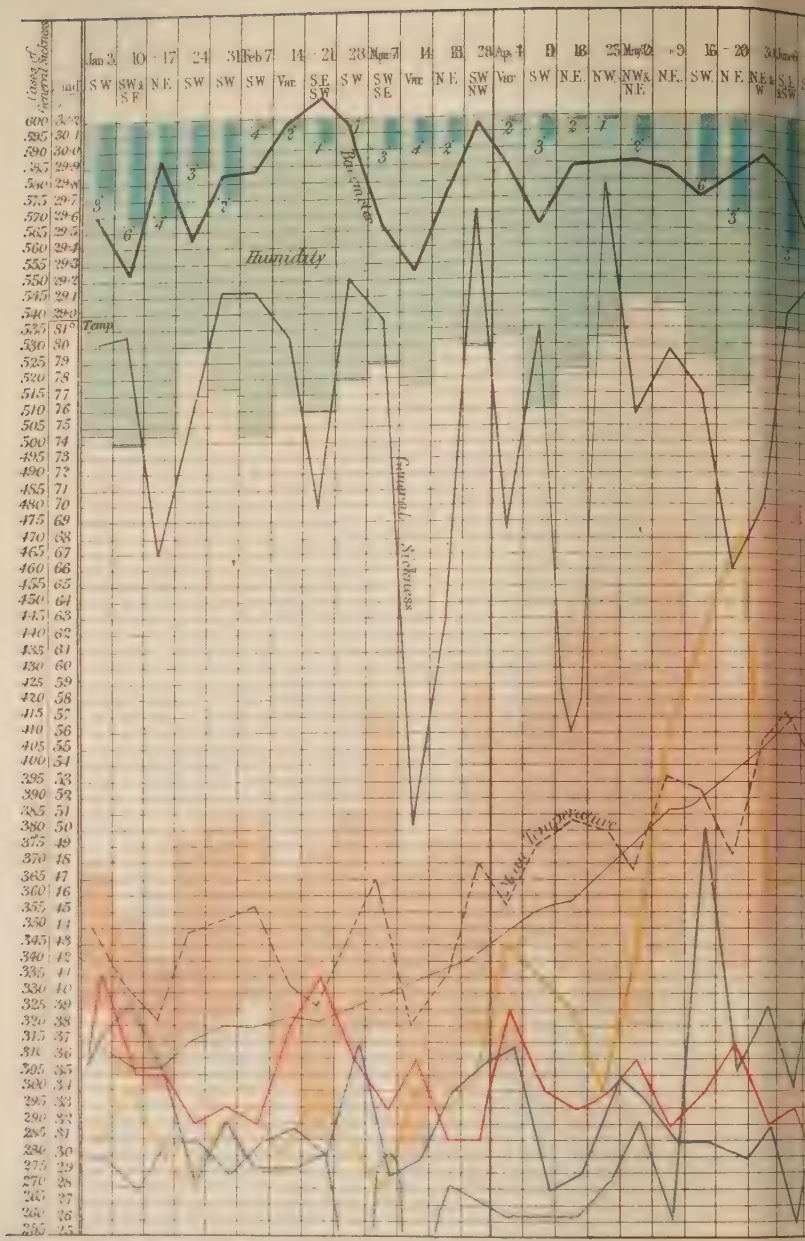

Aug 2 9 16 23 30 Sep 6 13 20 27 Oct 4 11 18 25 Nov 1 8 15 22 29 Dec 6 13 20 27
S.W. S.W. S.W. S.W. Var. Calm N.E. N.E. S.E. S.W. N.E. Var. S.W. N.E. S.W. S.W. S.E. Var. Calm S.W. N.E. N.E. S.E. S.E. S.W. S.W.W. S.W. S.W.
Atmospheric Pressure Thermometer
Rainfall in inches.
52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82
0·25 0·50 0·75 1·00 1·25 1·50 1·75 2·00
Rain
Humidity
Cases of Epidemic Diseases
47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Deaths
Temperature 33 Years
Smallpox.
Hooping Cough.

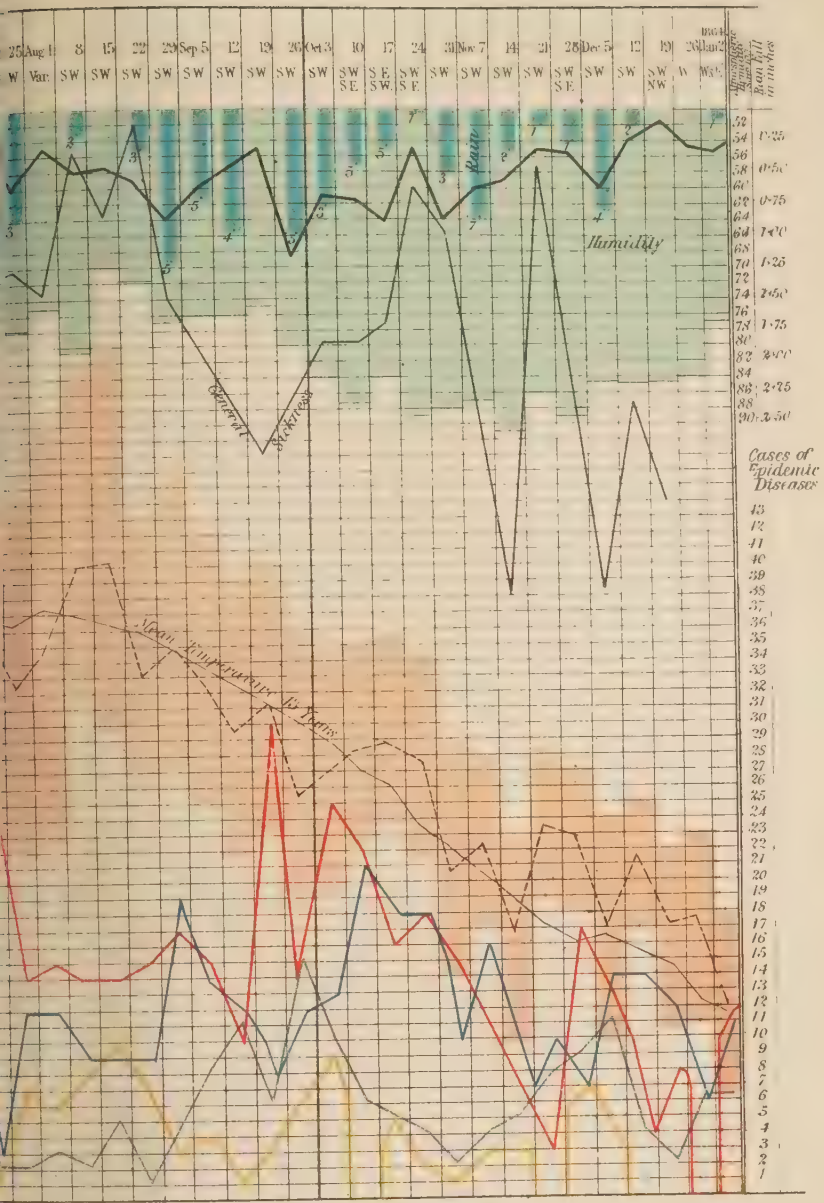
Vincent Brooks Day & Son Lith. London W.C.


Jan 3 10 17 24 31 Feb 7 14 21 28 Mar 7 14 21 28 Apr 7 11 18 25 May 2 9 16 23 30 June
Humidity
Temp.
Barometer
Diarrhœa



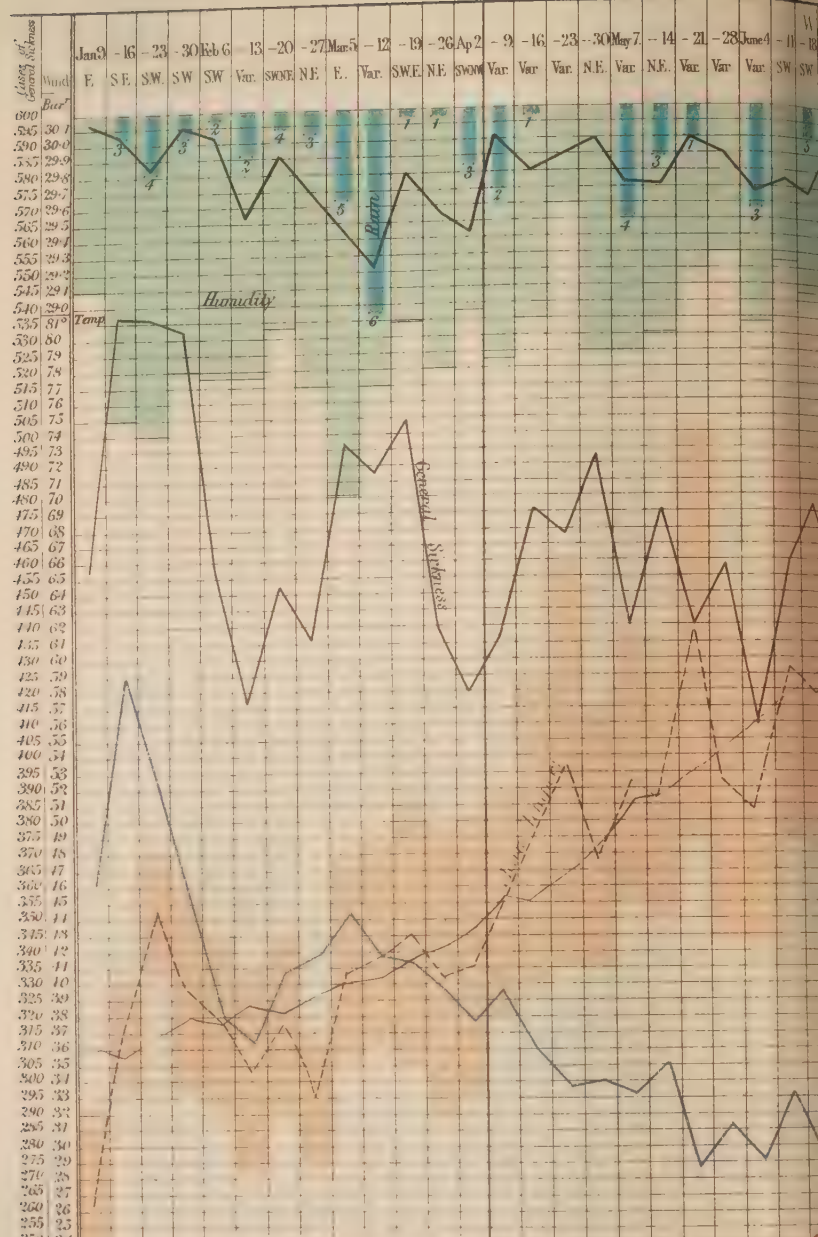
Vincent Brooks Day & Son, Lith. London W.C

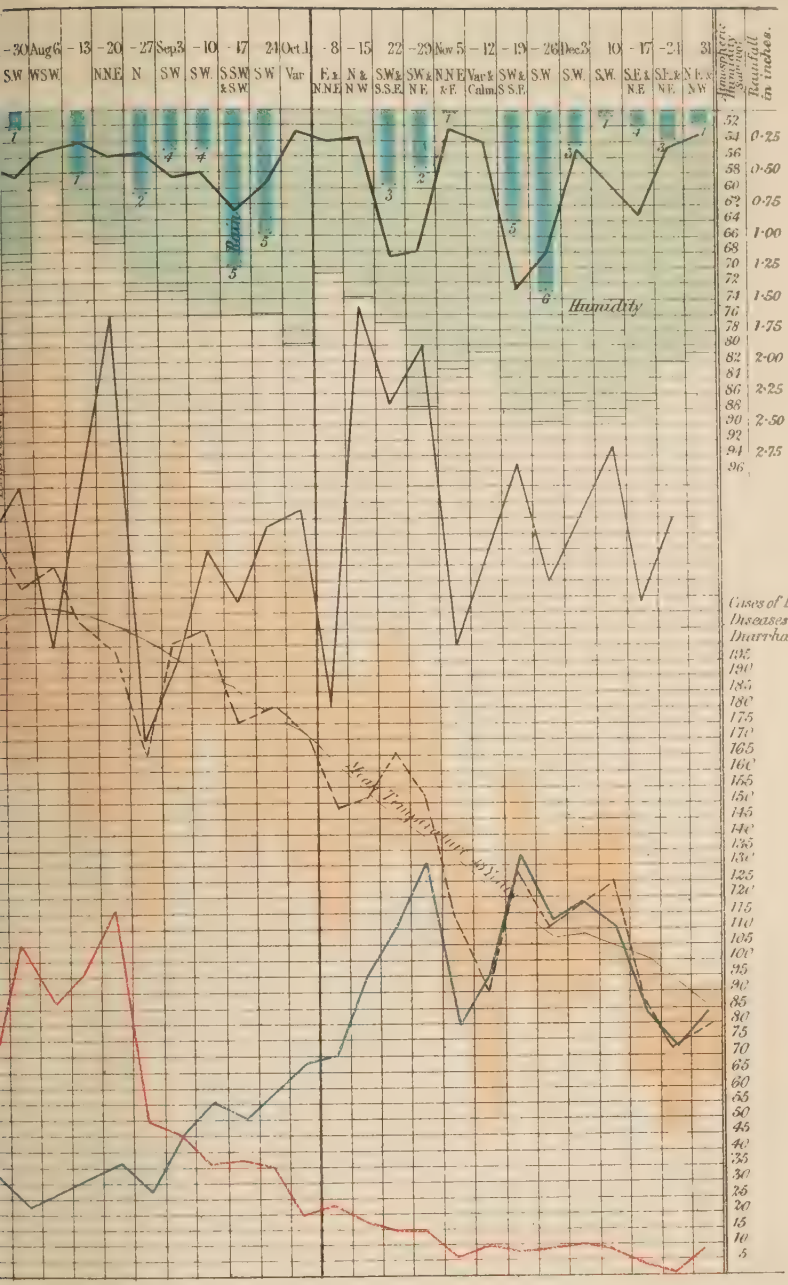

Humidity
Barometer
Temp.
General Sickness
Mean Temperature
Measles
Scarla



Small pox _____ *Hooping Cough*

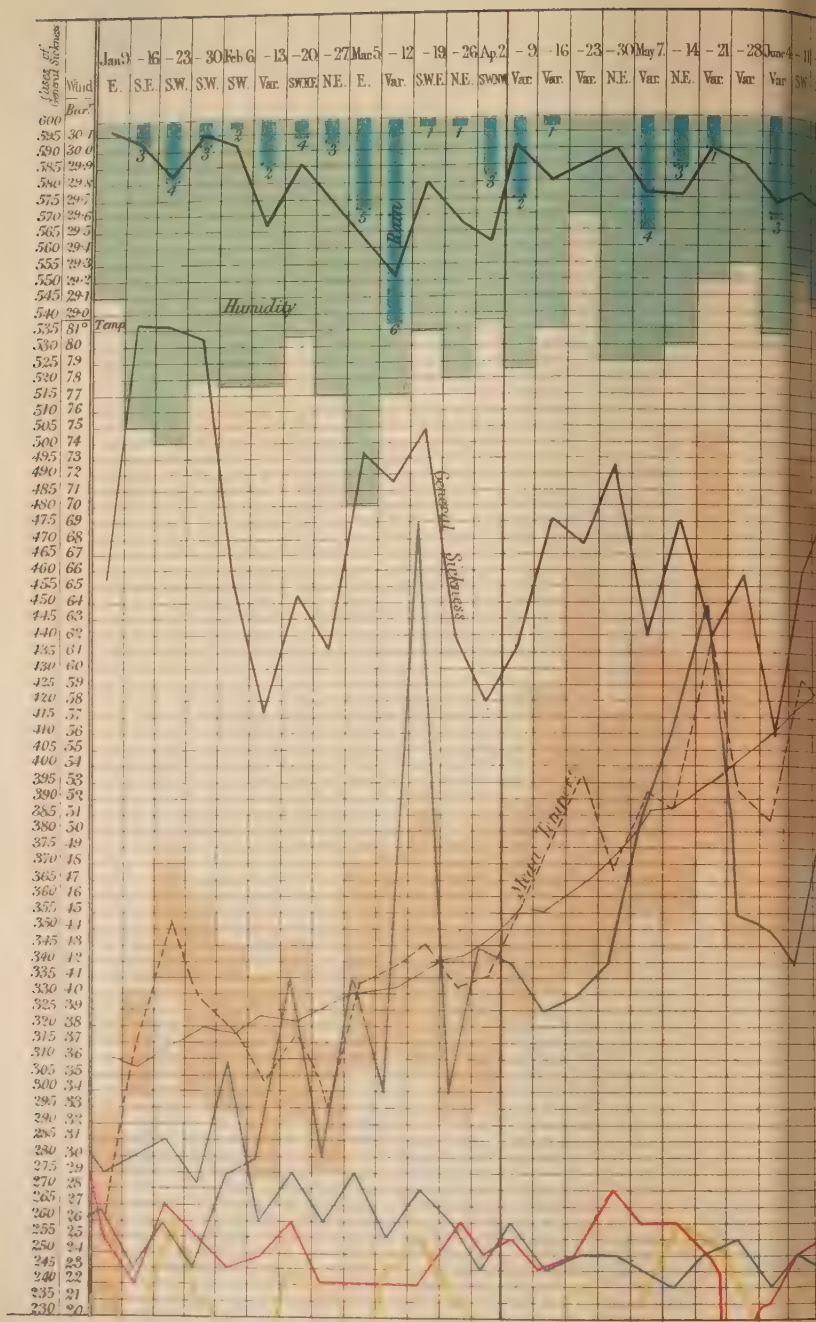
Vincent Brooks Day & Son Lith. London W.C.

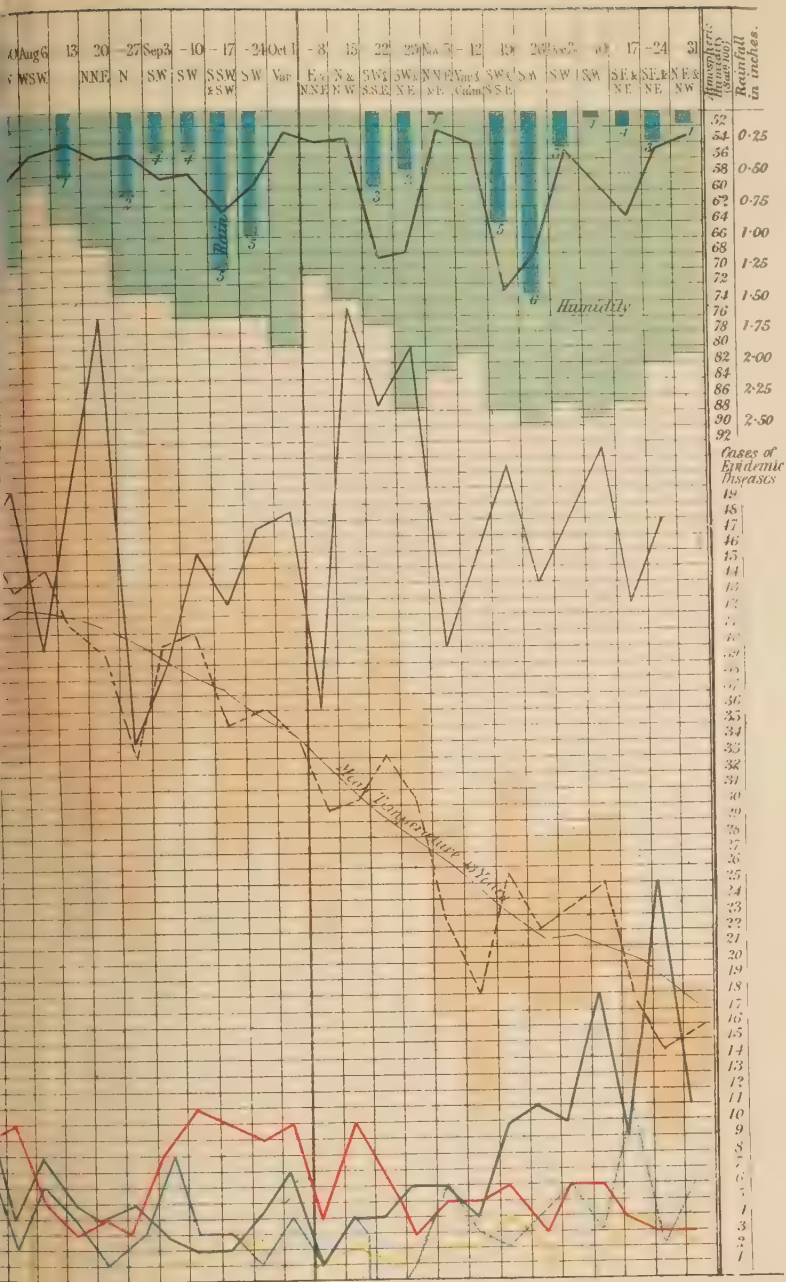

Jan. 9 - 16 - 23 - 30 Feb 6 - 13 - 20 - 27 Mar. 5 - 12 - 19 - 26 Ap 2 - 9 - 16 - 23 - 30 May 7 - 14 - 21 - 28 June 4 - 11 - 18
E. S.E. S.W. S.W. S.W. Var. S.W.N.E. N.E. E. Var. S.W.E. N.E. S.W.W. Var Var Var N.E. Var N.E. Var Var Var SW SW
Wind.
Barr.
Humidity
Temp.
Barn.
General Sickness
Diarrh



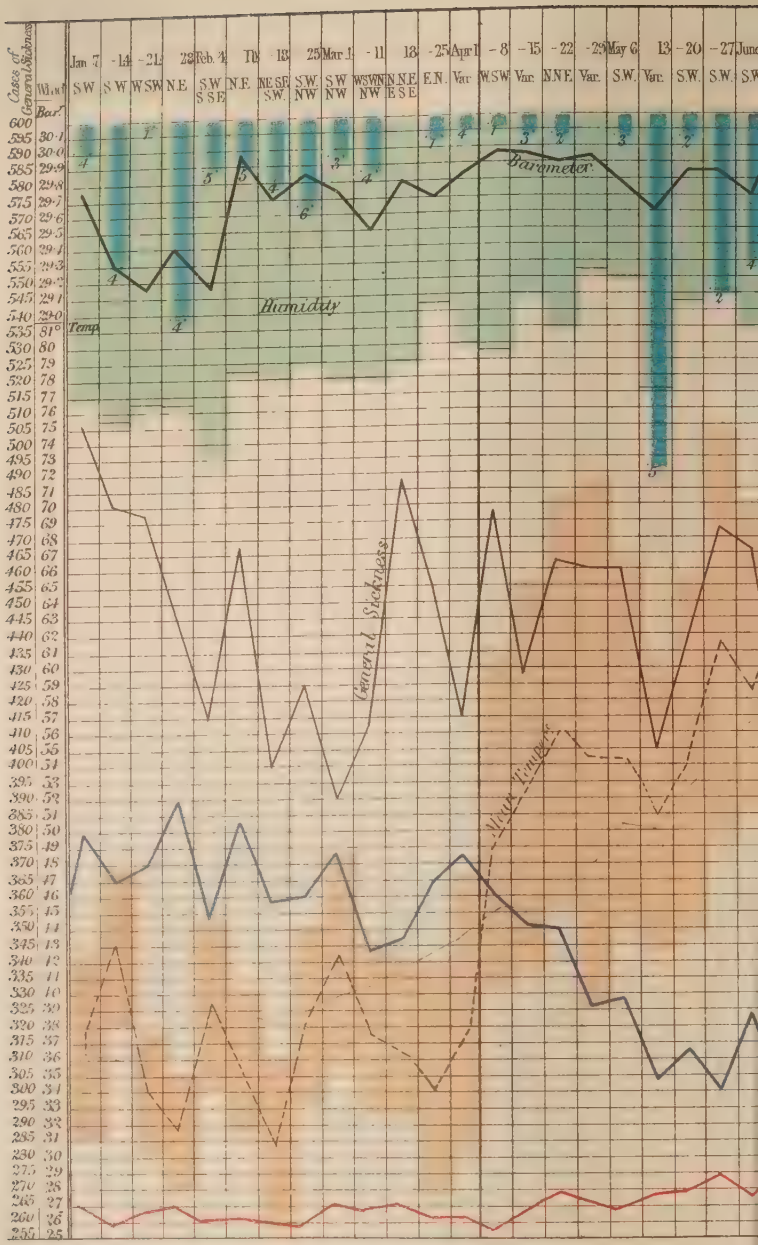
——*Respiratory diseases.*

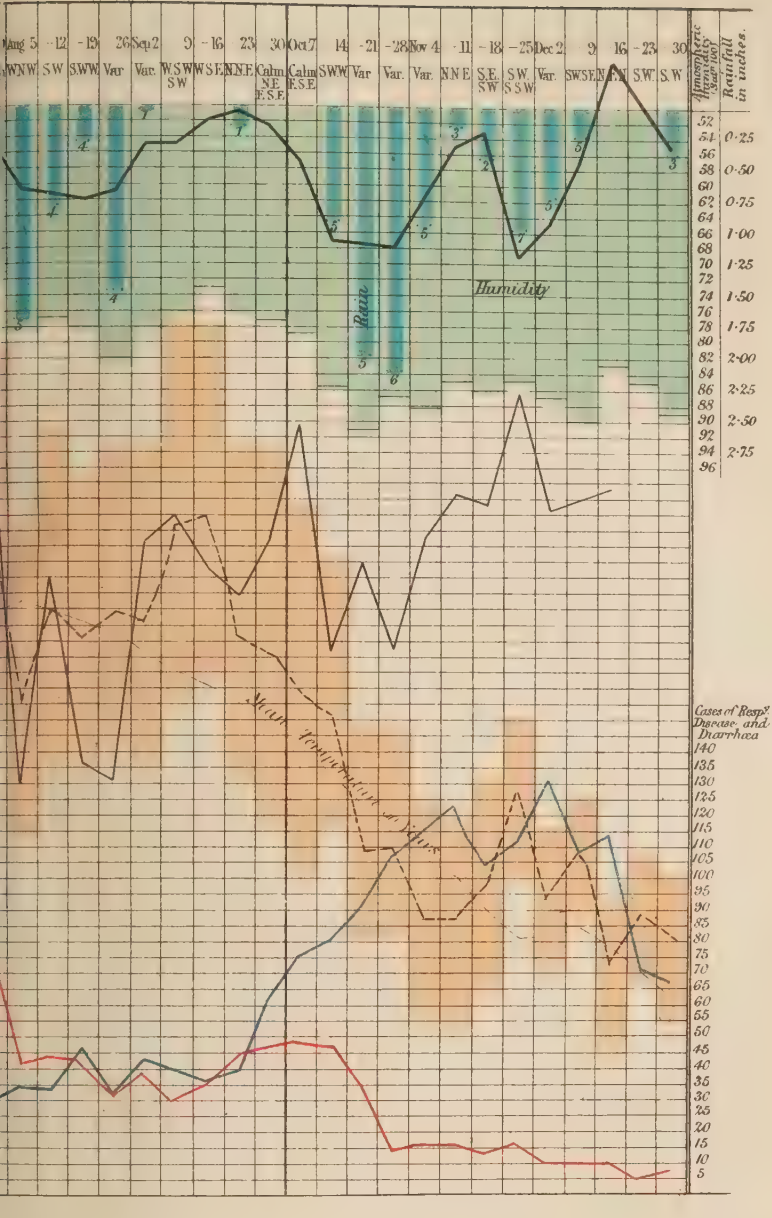
Vincent Brooks Day & Son Lith. London W.C.


Jan. 9 - 16 - 23 - 30 Feb 6 - 13 - 20 - 27 Mar 5 - 12 - 19 - 26 Ap 2 - 9 - 16 - 23 - 30 May 7 - 14 - 21 - 28 June 4 - 11
Wind
Bar.
Temp.
Humidity
Rain
General Sickness
Mort. Typhus
Measles
Scarlat

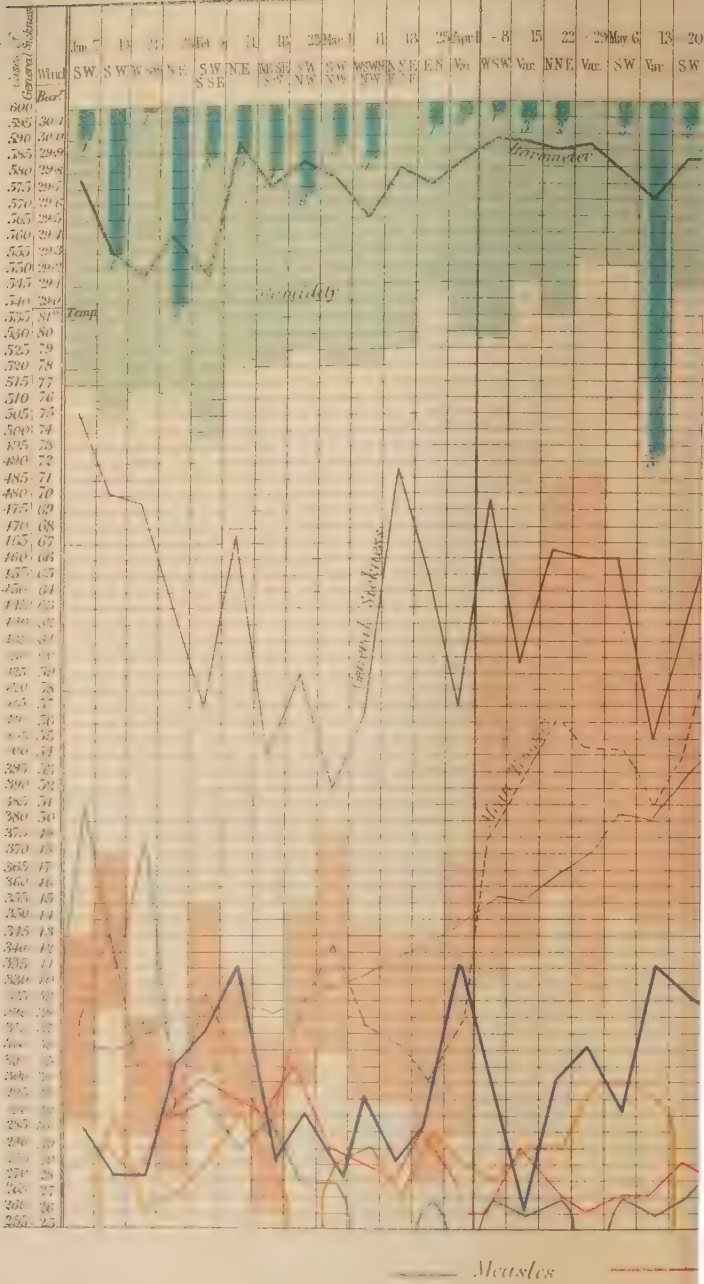

Aug 6 13 20 27 Sep 3 10 17 24 Oct 1 8 15 22 29 Nov 5 12 19 26 Dec 2 9 17 24 31
Atmospheres Humidity
Rainfall in inches.
Cases of Epidemic Diseases
Rain
Humidity
Mean Temperature of Years
Small pox
Hooping Cough

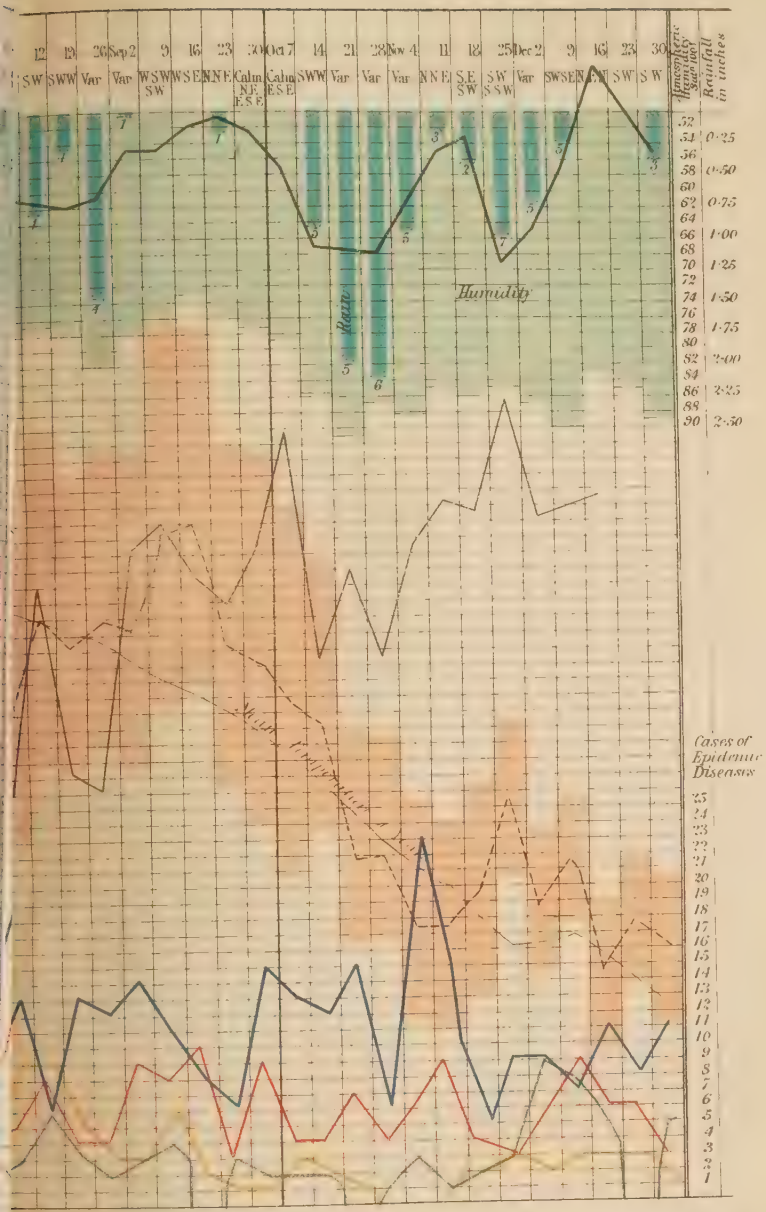
Vincent Brooks Day & Son Lith. London W.C.


Cases of General Sickness
Jan 7 - 14 - 21 - 28 Feb. 4 - 11 - 18 - 25 Mar. 4 - 11 - 18 - 25 Apr 1 - 8 - 15 - 22 - 29 May 6 - 13 - 20 - 27 June
S.W. S.W. W.S.W. N.E. S.W. S.S.E. N.E. N.E. S.E. S.W. S.W. N.W. S.W. N.W. W.S.W. N.W. N.N.E. E.S.E. E.N. Var. W.S.W. Var. N.N.E. Var. S.W. Var. S.W. S.W. S.W.
Wind
Bar.
Temp.
Humidity
Barometer
General Sickness
Vines Tincture
Diarrhœa

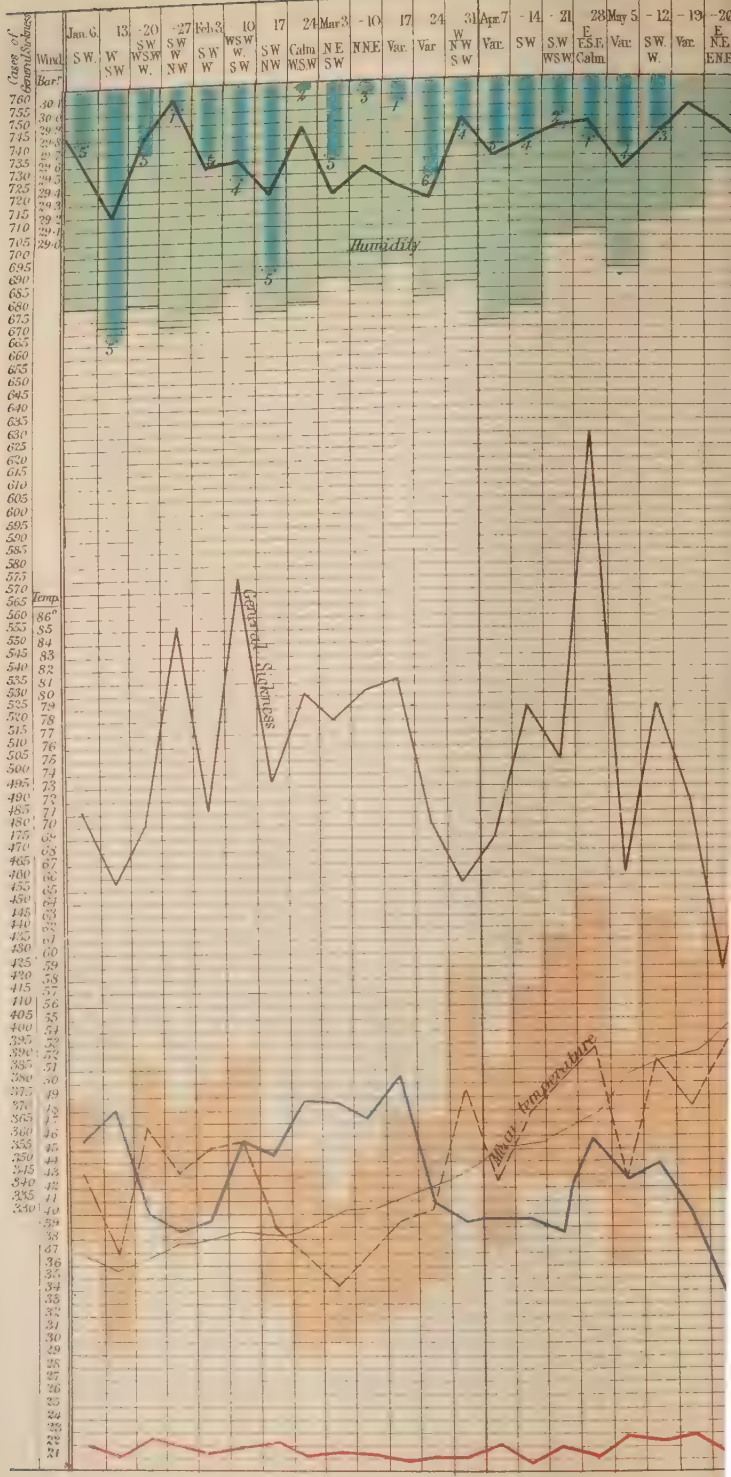

Aug 5 12 19 26 Sep 2 9 16 23 30 Oct 7 14 21 28 Nov 4 11 18 25 Dec 2 9 16 23 30
N.W. S.W. S.W.W. Var. Var. W.S.W. S.W. S.E. N.N.E. Calm N.E. E.S.E. Calm E.S.E. S.W.W. Var. Var. Var. N.N.E. S.E. S.W. S.W. S.S.W. Var. S.W.E. N.E. S.W. S.W.
Atmospheric Humidity at 9 a.m.
Rainfall in inches.
Rain
Humidity
Mean Temperature of Week
Cases of Resp.y Disease and Diarrhœa
Respiratory Diseases.

Vincent Brooks, Day & Son, Lith. London W.C.


Barometer
Humidity
Temp.
General Sickness
Wind
Measles



all pox ——— Hooping Cough


Jan. 6
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Feb. 3
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Mar. 3
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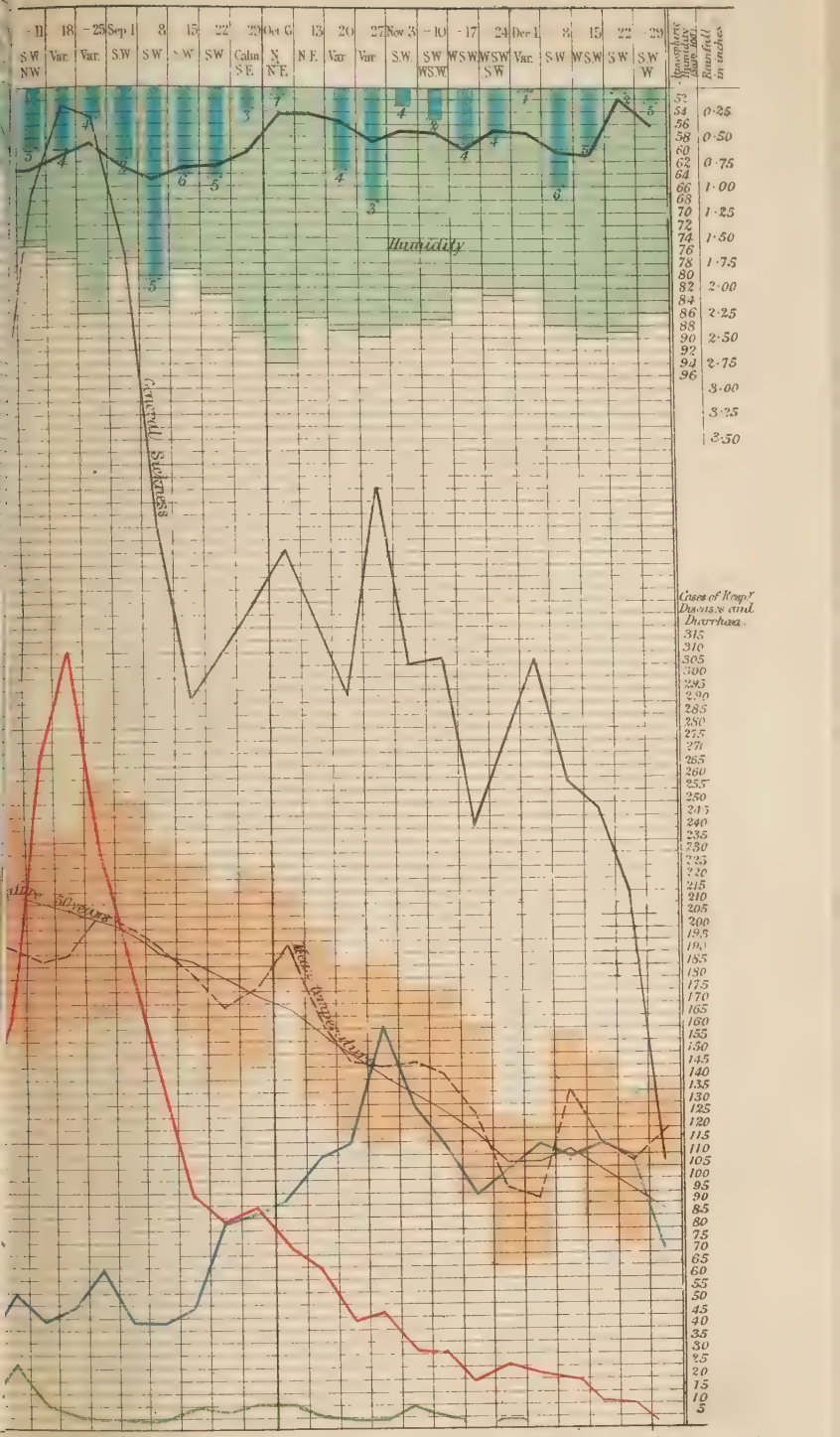
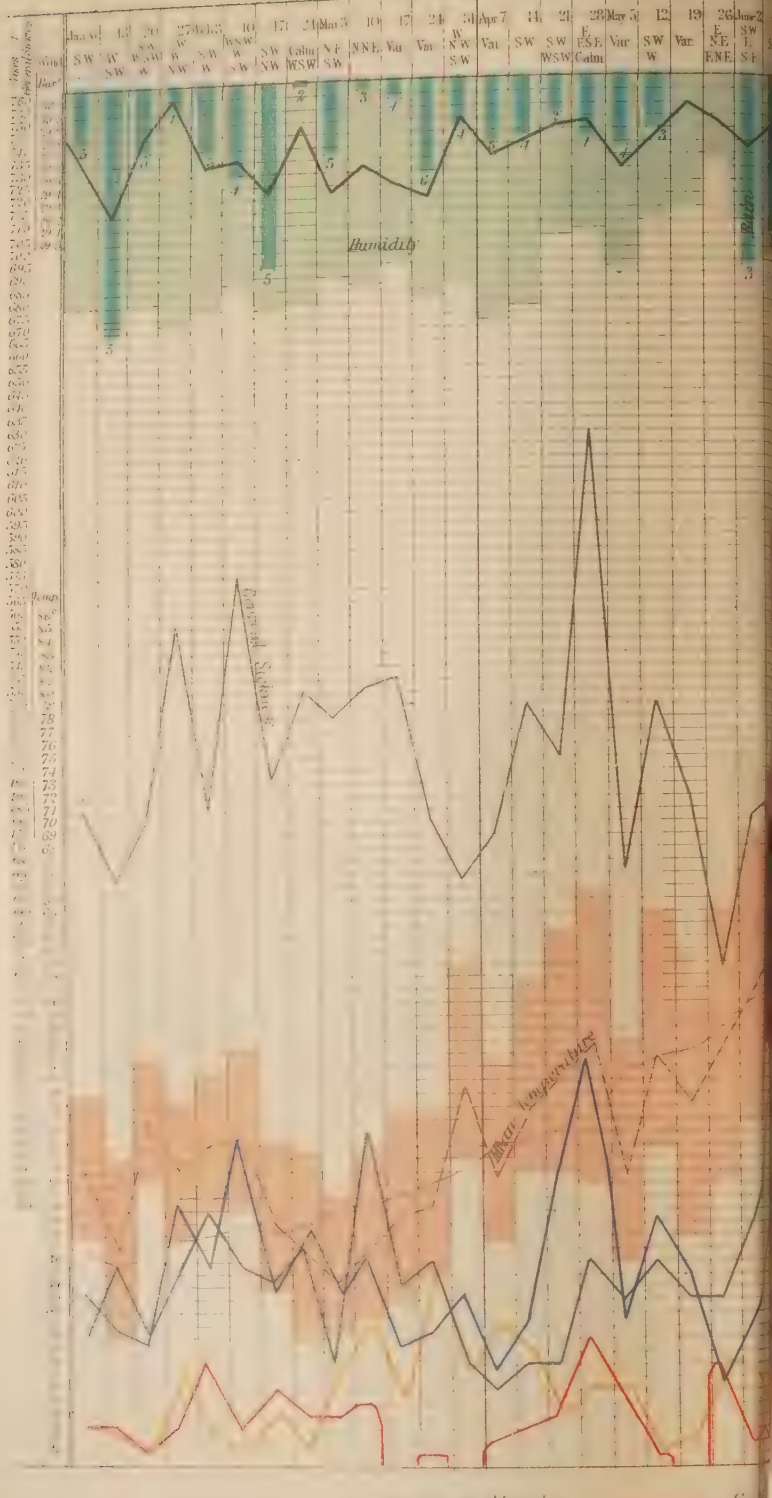
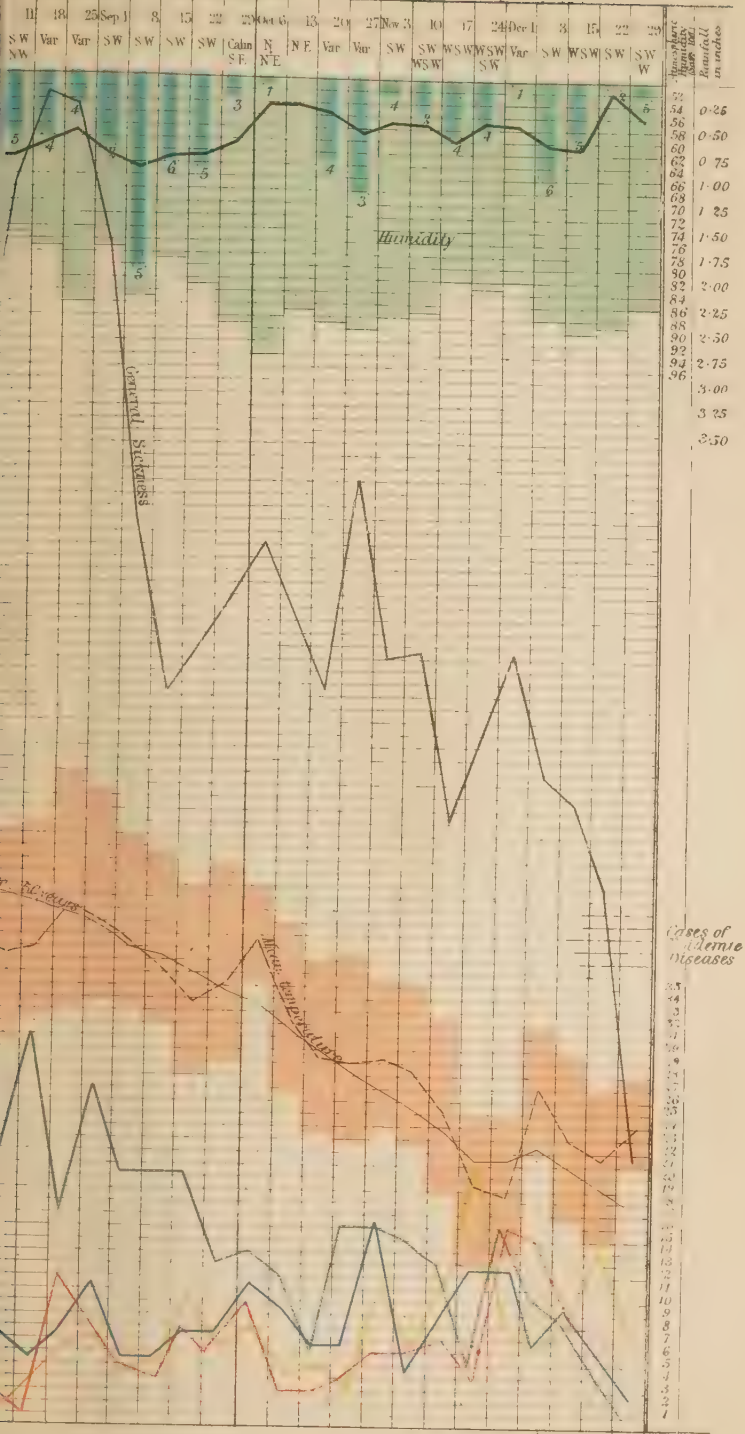
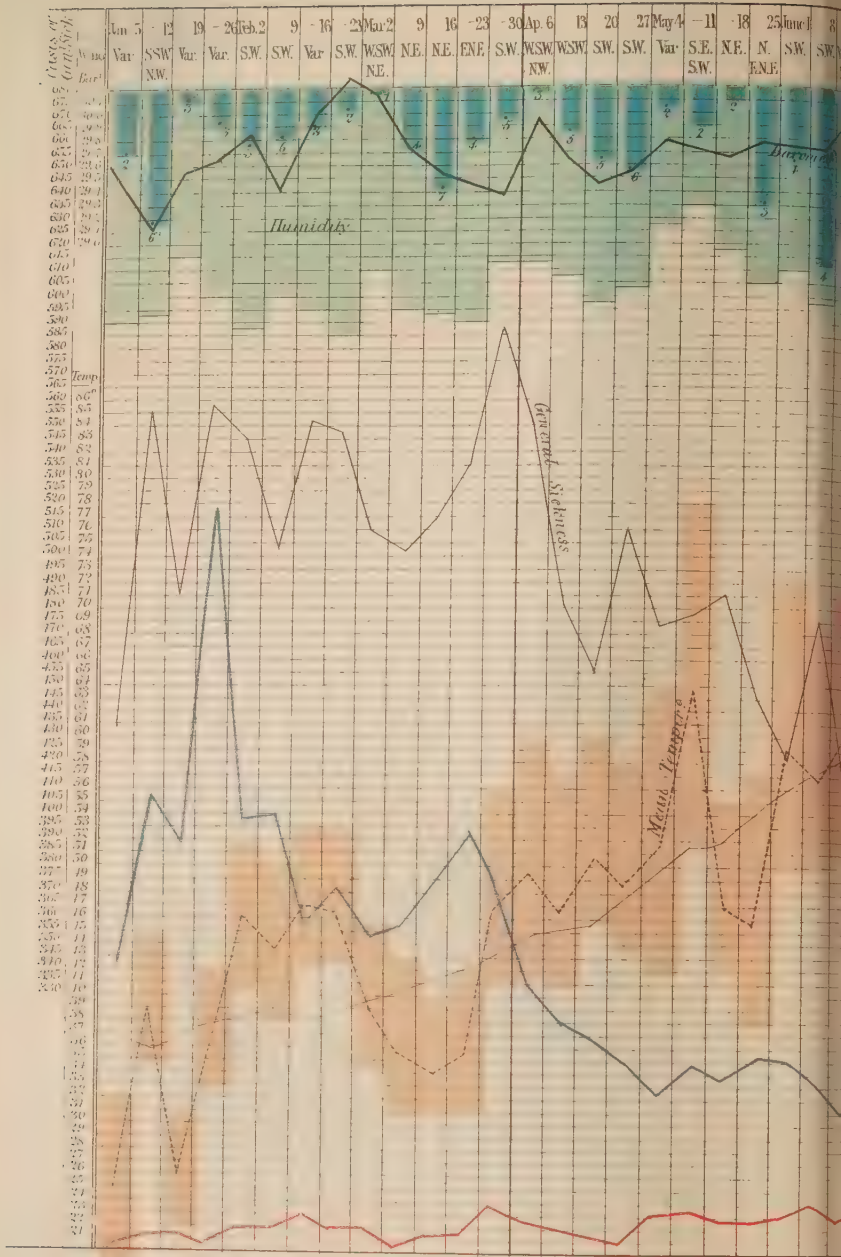
31
Apr. 7
14
21
28
May 5
12
19
26
Wind
Bar.
Temp.
Humidity
General Sickness
Mean temperature

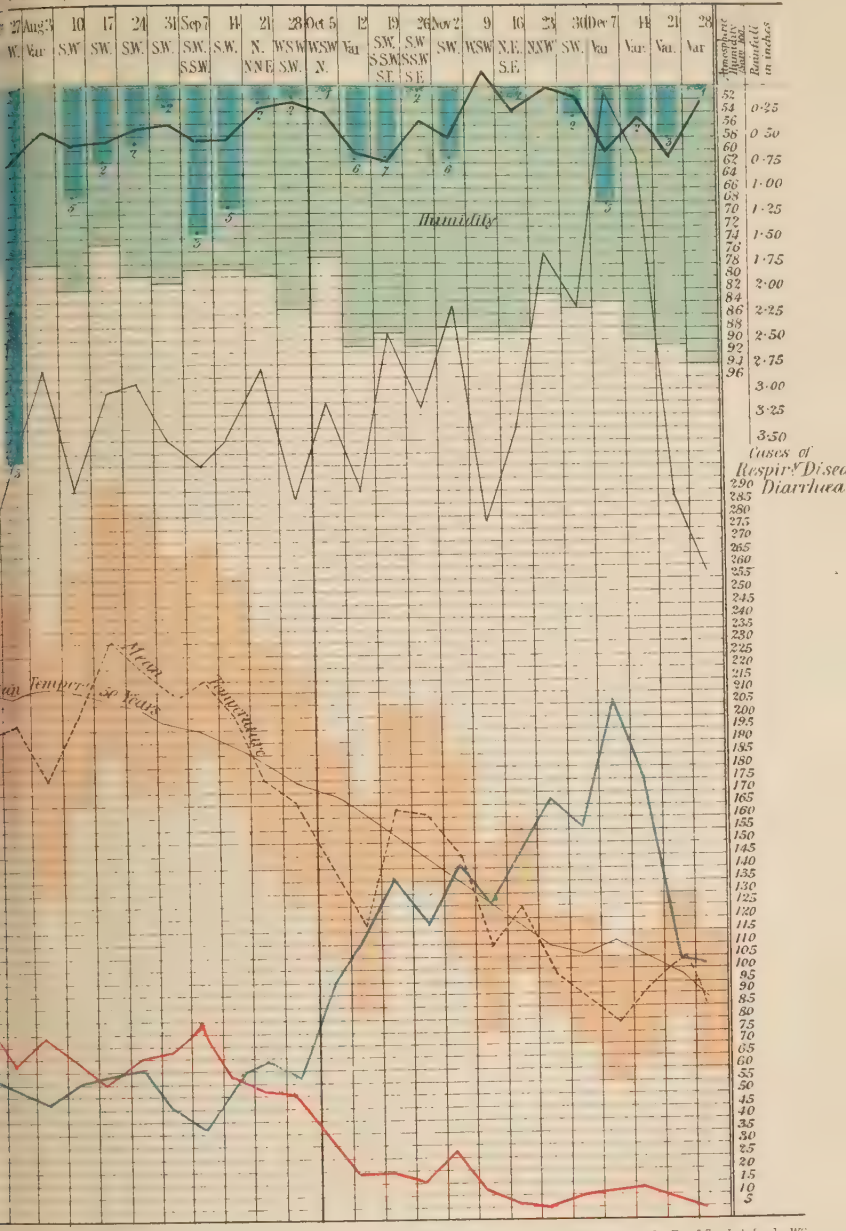

- 11 18 - 25 Sep 1 8 15 22 29 Oct 6 13 20 27 Nov 3 - 10 - 17 24 Dec 1 8 15 22 29
S.W. NW Var. Var. S.W. S.W. S.W. S.W. Calm S.E. N N.E. N.E. Var. Var. S.W. S.W. S.W. S.W. WSW SW WSW SW Var. S.W. W.S.W. S.W. S.W. W
Atmosphere Humidity at 10 A.M.
Rainfall in inches
Humidity
General Sickness
Cases of Resp.y Diseases and Diarrhœa
Vincent Brooks Day & Son Lith. Lond. nW.C.
Cholera


Humidity
Mean temperature
Measles
Scarlet

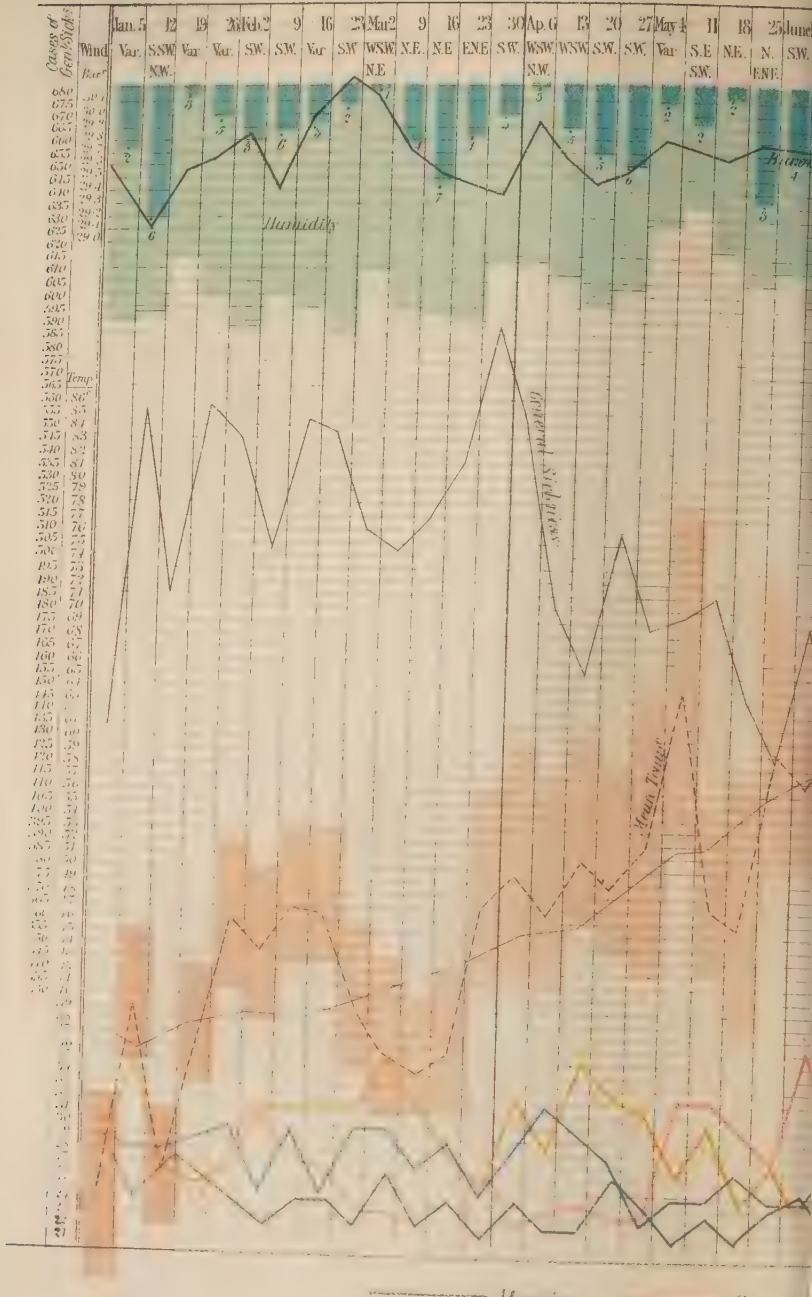


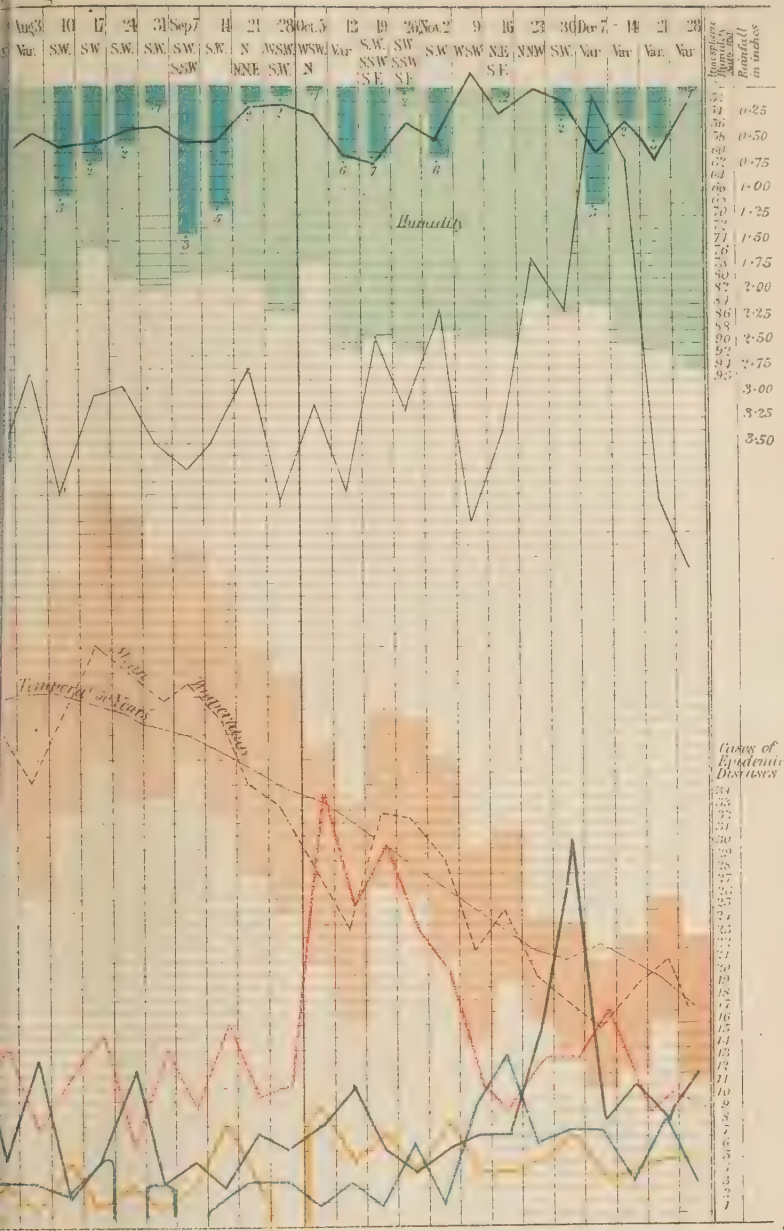
William Brooks Day & Son Lith. London WC


Jan. 5 - 12 19 - 26 Feb. 2 9 - 16 - 23 Mar. 2 9 16 - 23 - 30 Ap. 6 13 20 27 May 4 - 11 - 18 25 June 1 8
Wind
Humidity
Temp.
General Sickness
Mean Temperature
Diarrhœa
Respiratory Dis



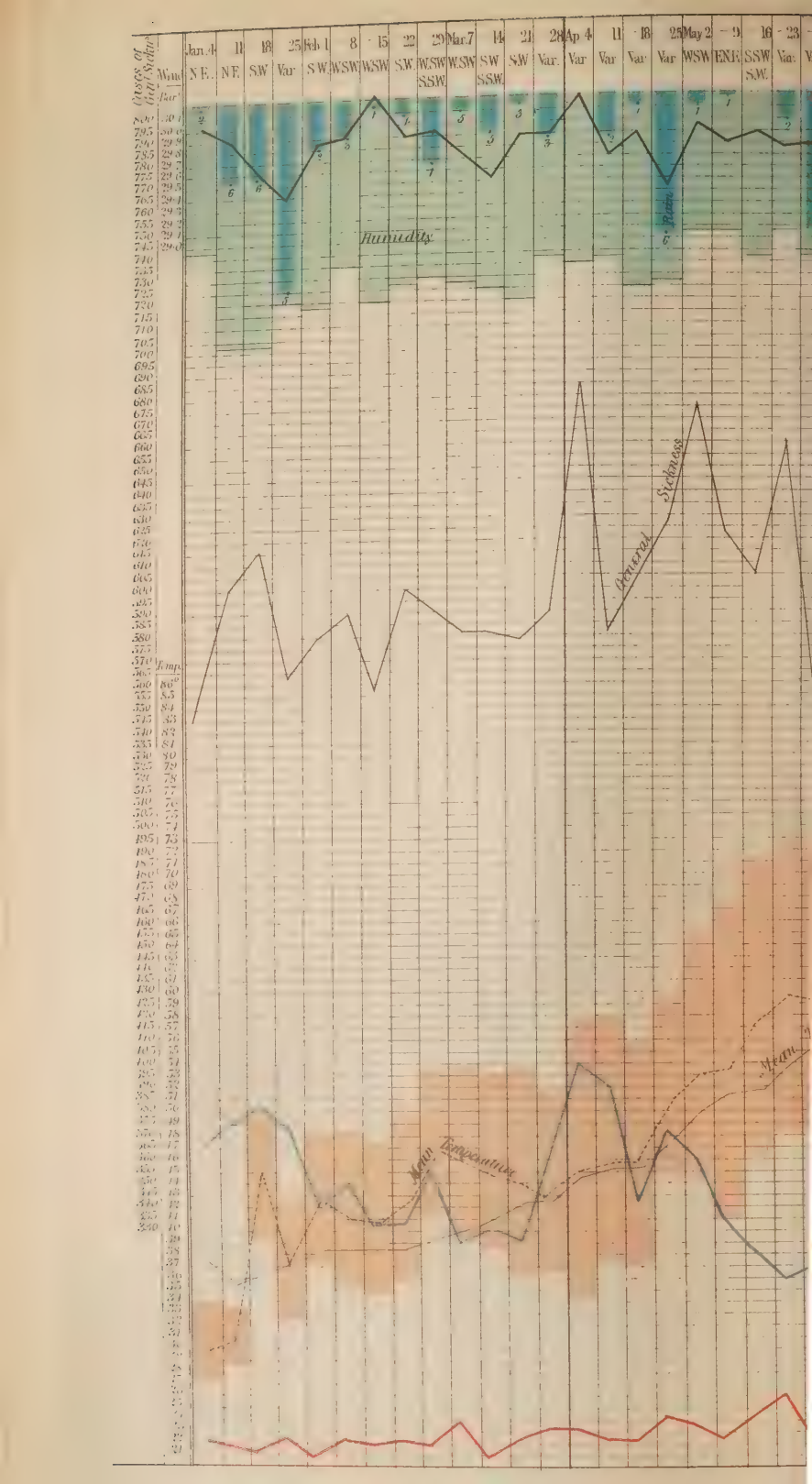
Vinc.nt Brooks, Day & Son, Lith., London, W.C.

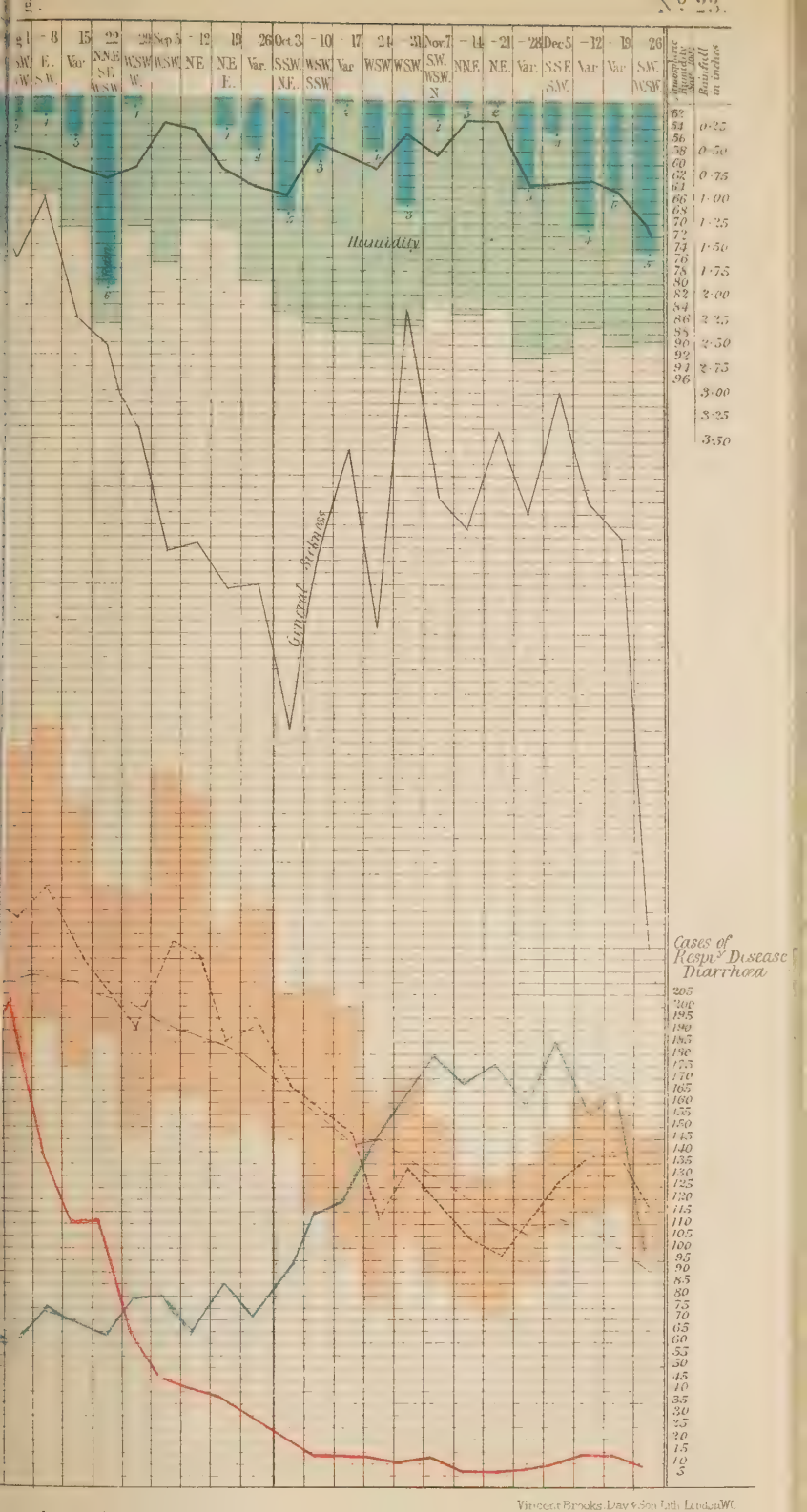

Deaths of Gentlefolks
Wind
Barr
Temp
Jan. 5
12
19
26
Feb. 2
9
16
23
Mar. 2
9
16
23
30
Ap. 6
13
20
27
May 4
11
18
25
June
Var.
S.SW.
NW.
Var.
Var.
SW.
S.W.
Var.
SW.
WSW.
NE
N.E.
N.E.
E.N.E.
S.W.
WSW.
S.W.
WNW.
S.W.
S.W.
Var.
S.E.
S.W.
N.E.
N.
E.N.E.
S.W.
Humidity
Deaths of Gentlefolks
Grain Trade
Measles.
Scarlat

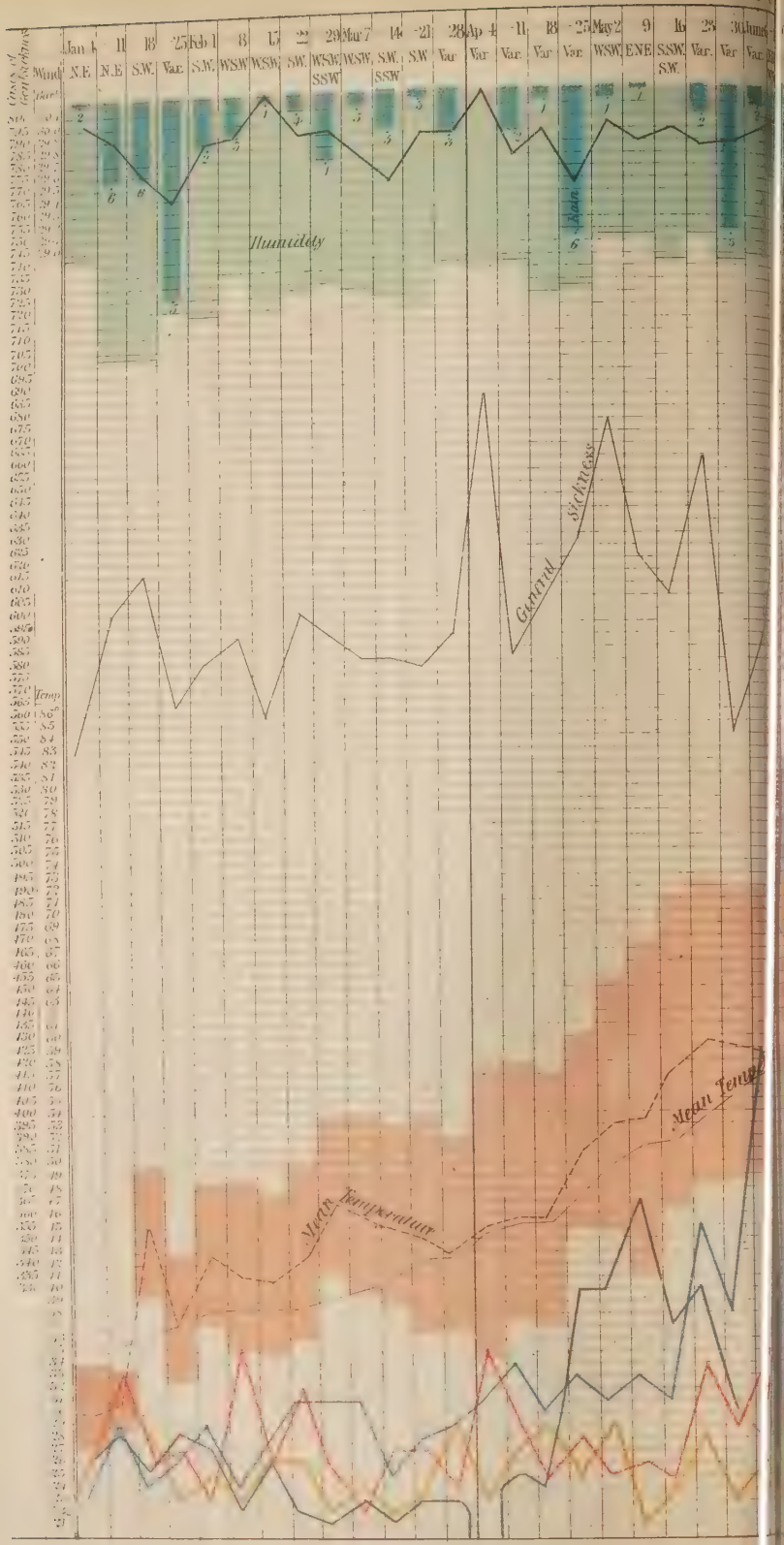


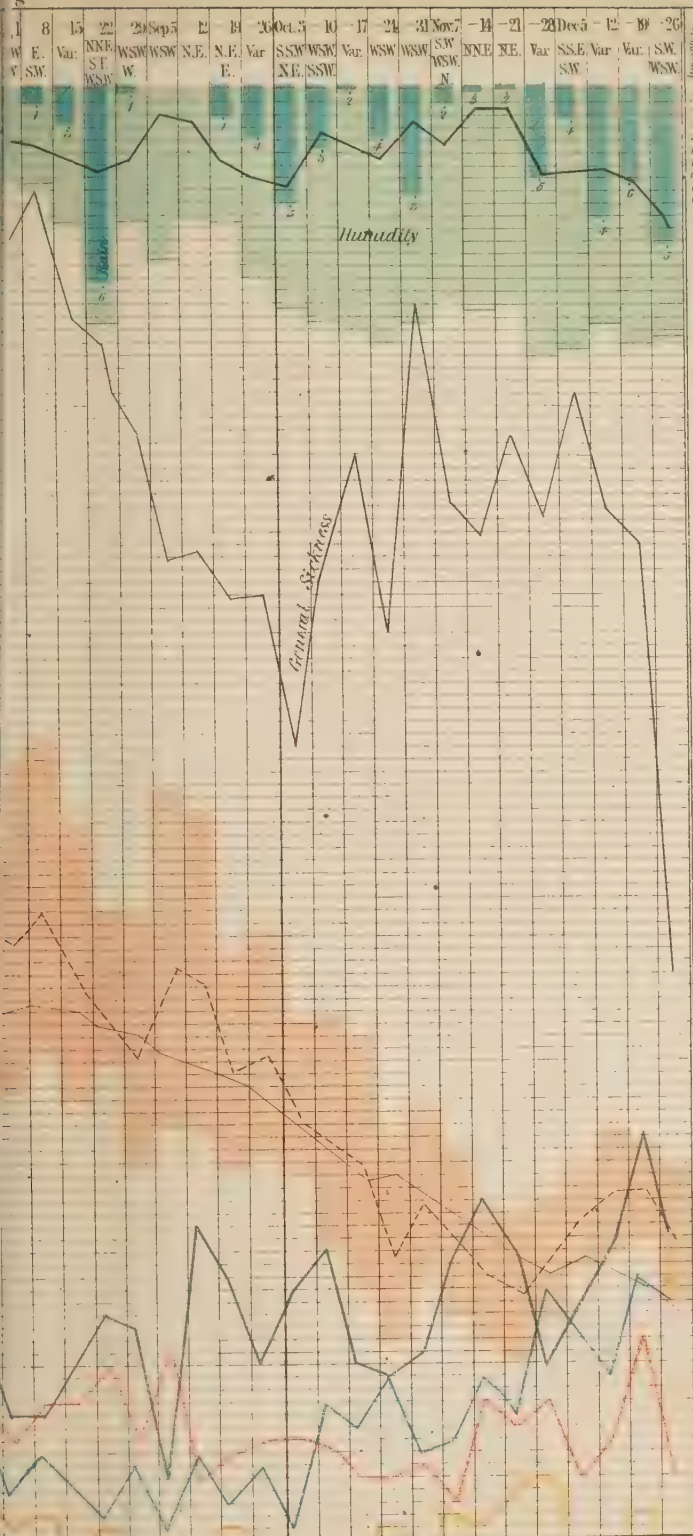
Vincent Brooks Day & Son Lith. London W.C.

Smallpox —— Hooping Cough.

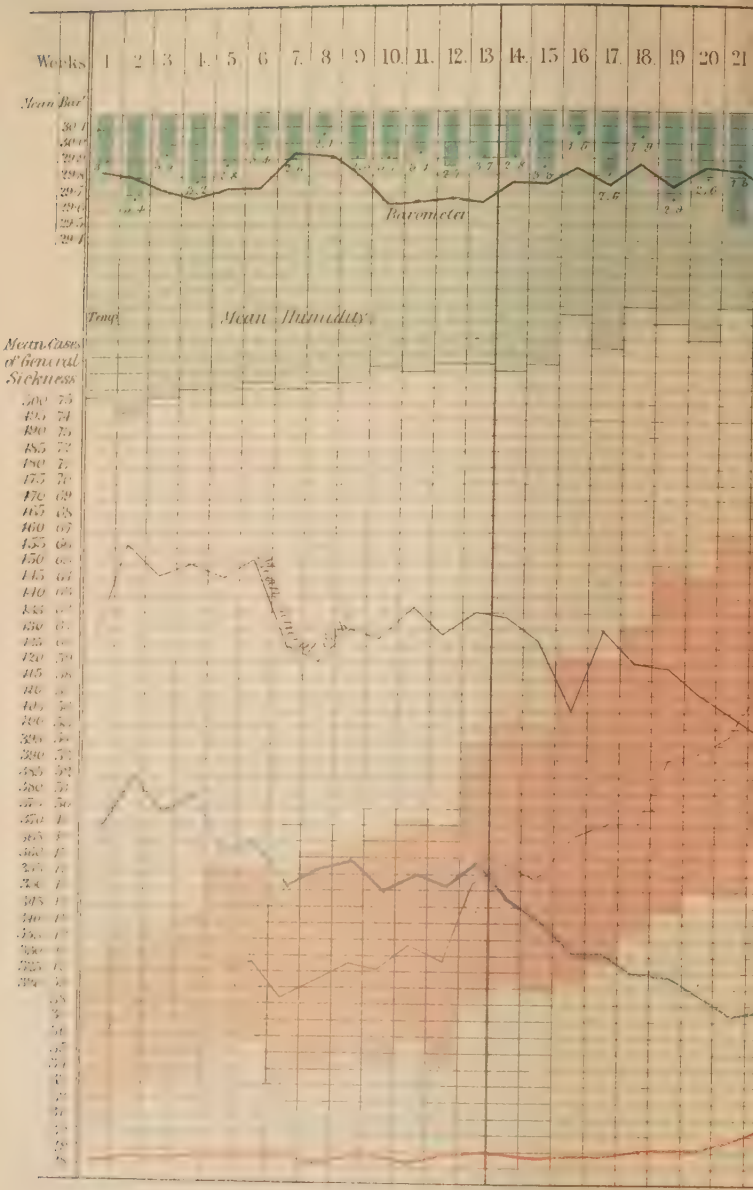

Jan. 4
11
18
25
Feb. 1
8
15
22
29
Mar. 7
14
21
28
Apr. 4
11
18
25
May 2
9
16
23
Wind
Bar.
Humidity
Rain
Sickness
Diseased
Mean Temperature
Mean


Humidity
Clinical Sickness
Cases of Resp.y Disease
Diarrhoea
Rainfall in inches
Temperature
Vincent Brooks Day & Son Lith. London W.C.


Jan 4
11
18
25
Feb 1
8
15
22
29
Mar 7
14
21
28
Ap 4
11
18
25
May 2
9
16
23
30
June
Wind
N.E.
N.E.
S.W.
Var.
S.W.
W.S.W.
W.S.W.
S.W.
W.S.W.
S.W.
S.W.
Var
Var
Var
Var
W.S.W.
E.N.E
S.S.W.
S.W.
Var.
Var
Var
Humidity
Rain
General Sickness
Mean Temperature
Mean Temperature
Temp
Measles
Scarl

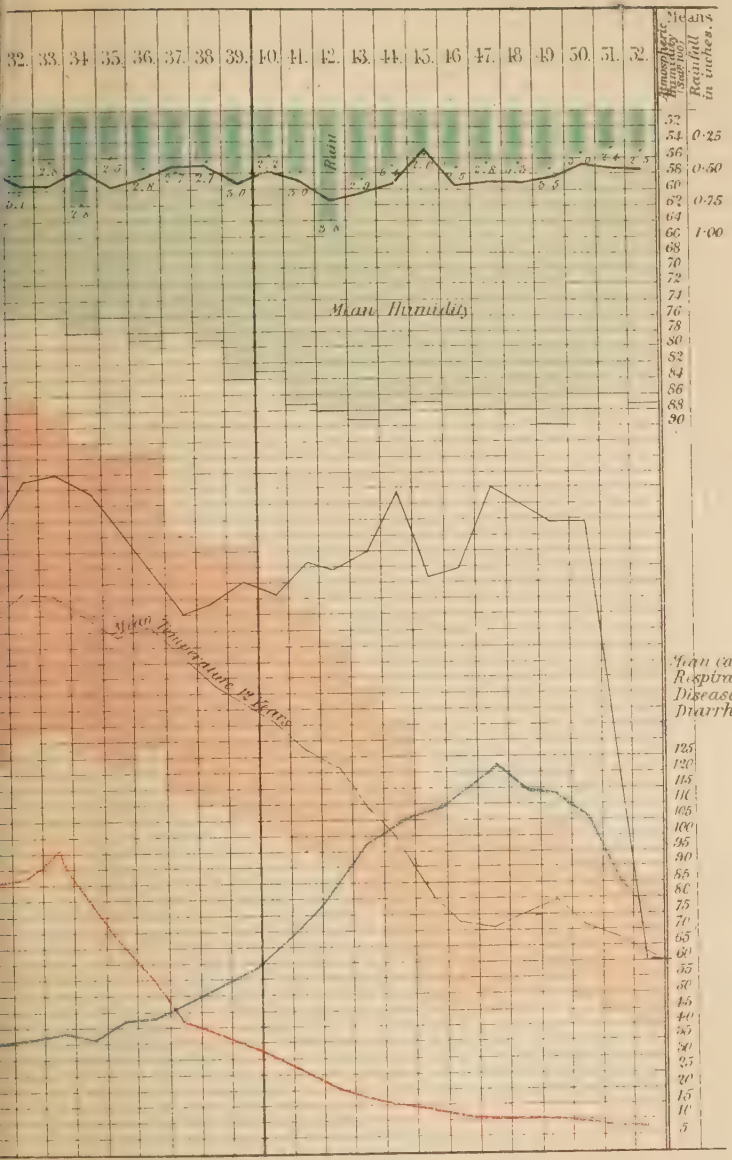


Rainfall. Hooping Cough.


Weeks
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
Mean Bar.
Barometer
Temp.
Mean Humidity
Mean Cases of General Sickness
Diarrh

R S.

Nº 25


Years
32. 33. 34 35. 36. 37. 38 39. 40. 41. 42. 43. 44. 45. 46 47. 48 49. 50. 51. 52.
Atmospheric Humidity Saturation = 100
Rainfall in inches.
Rain
Mean Humidity
Mean Temperature in Degrees
Mean cases of Respiratory Diseases & Diarrhœa.

ratory Diseases.

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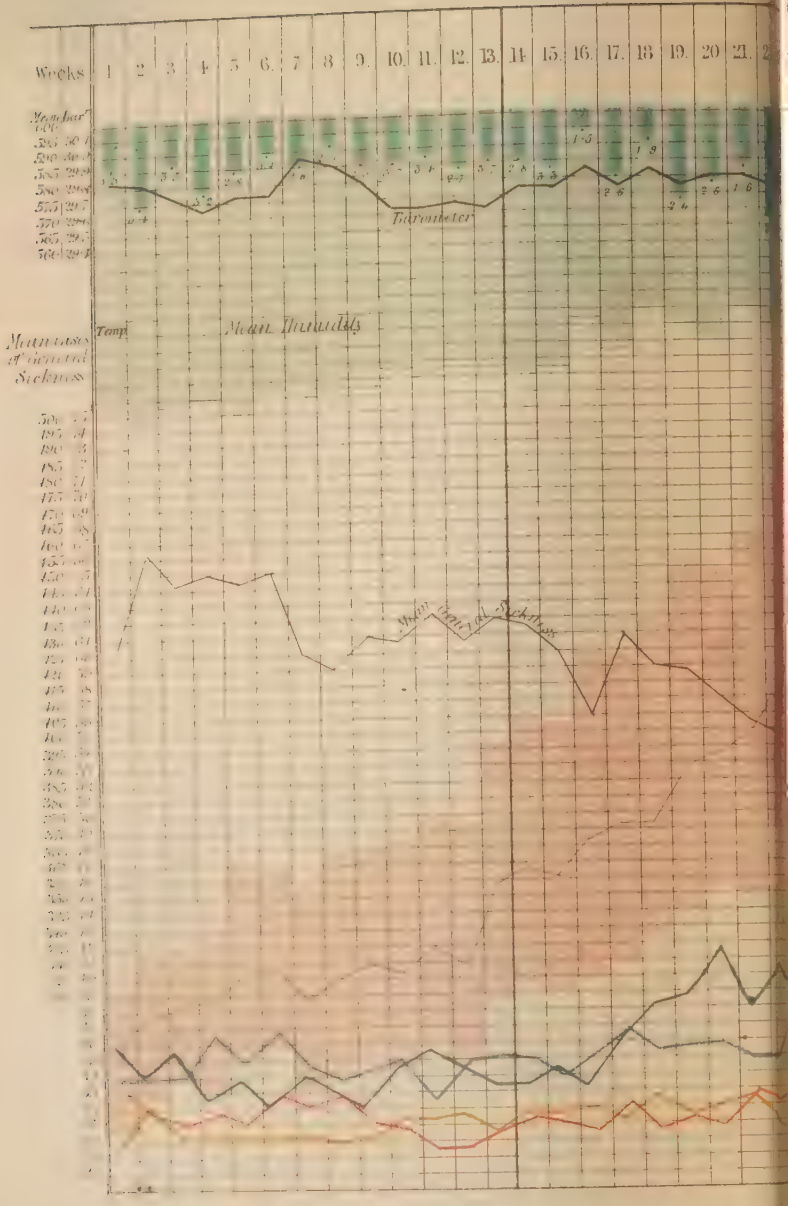
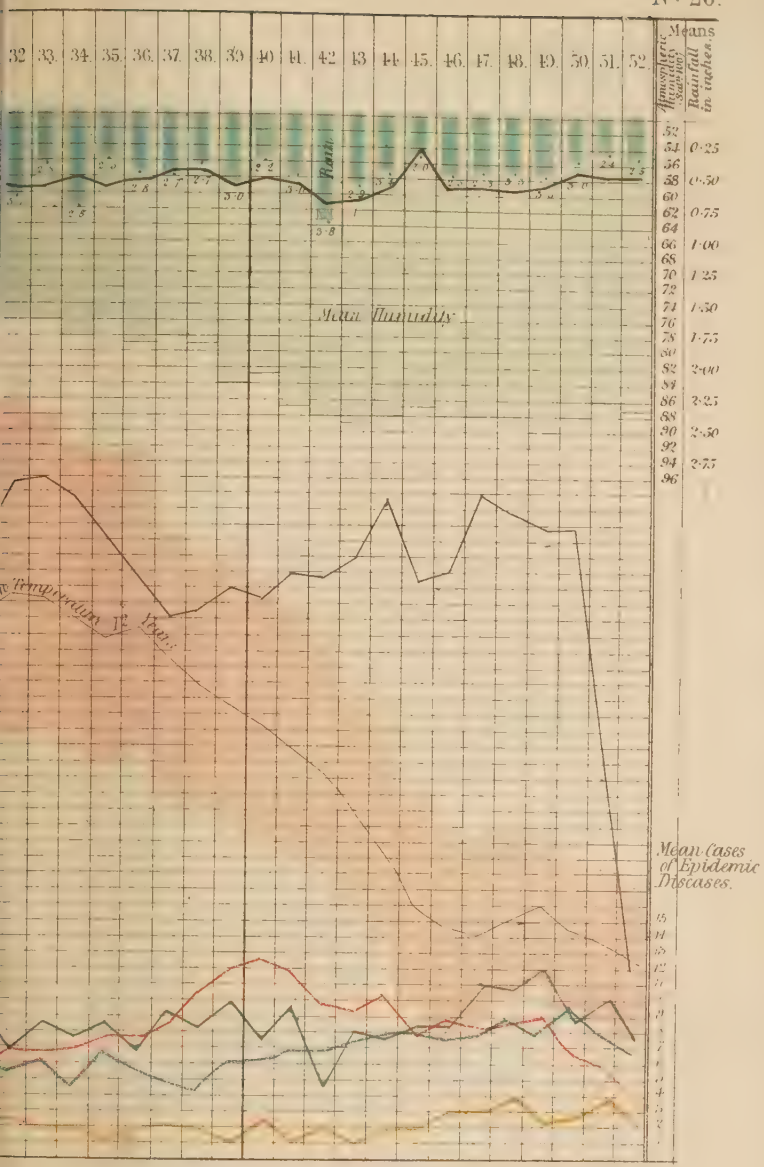

Weeks
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Barometer
Temp.
Mean Thermometer
Mean Deaths
Mean Deaths of Diarrhœal Sickness
Measles

RS.


No 26.
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
Means
Atmospheric Pressure 29.000
Rainfall in inches.
Rain.
Mean Humidity
Mean Temperature
Mean Cases of Epidemic Diseases.
Hooping Cough

Vincent Brooks Day & Son Lith. London W.C.

Summer Quarters.

Of greater Prevalence of Scarlatina.

Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.	
1858 -	72	61·0	74	5·39	29
1859 -	103	62·0	73	7·10	33
1863 -	217	59·1	74	5·18	27
1864 -	96	59·4	71	4·37	24
1865 -	94	62·5	75	6·41	29
1867 -	136	59·7	78	11·40	35
1868 -	141	64·1	70	4·40	23
Mean -	122	60·1	74	6·32	28

Of less Prevalence of Scarlatina.

Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.	
1857 -	33	63·3	77	5·73	30
1860 -	67	56·3	85	9·12	52
1861 -	84	60·4	78	4·20	43
1862 -	62	60·2	81	5·75	33
1866 -	69	58·7	80	7·93	45
Mean -	63	59·6	80	6·54	41

Autumn Quarters.

1859 -	221	43·0	87	7·18	48
1861 -	116	46·4	88	7·23	35
1862 -	135	45·6	89	7·04	40
1863 -	165	47·3	86	4·48	34
1867 -	222	43·1	87	4·52	37
1868 -	99	45·8	87	8·61	48
Mean -	159	45·2	87	6·51	40

1857 -	25	47·4	92	5·56	23
1858 -	68	43·5	87	3·11	31
1860 -	53	42·8	89	4·59	35
1864 -	65	43·6	82	4·13	29
1865 -	71	46·1	88	8·92	37
1866 -	95	46·5	87	5·36	48
Mean -	62	45·0	87	5·27	33

In 1861	-	-	472 cases, or	20·2	per 1,000 of all cases.
„ 1862	-	-	279 „	11·6	„ „
„ 1863	-	-	481 „	18·0	„ „
„ 1864	-	-	256 „	10·6	„ „
„ 1865	-	-	528 „	22·5	„ „
„ 1866	-	-	586 „	21·3	„ „
„ 1867	-	-	270 „	9·8	„ „
„ 1868	-	-	595 „	18·1	„ „

There is no indication here of a cyclical recurrence of the disease such as was noted in respect of measles and scarlatina.

Diagram 26 shows the line of the distribution of hooping cough on the whole through the several seasons of the year. It resembles the line of measles in presenting two waves—a larger one culminating in the month of June, and a smaller one in the month of December. There are, however, between the two waves these differences, viz., 1st, that although they correspond in this respect, the waves of hooping cough seem to anticipate a little those of measles; and 2nd, that the waves are less pronounced, this being due to a more uniform distribution of the disease than is observed with measles.

The following represents the mean distribution of hooping cough through the several seasons of the year, as per 100 cases:—

In January	-	-	8·4
„ February	-	-	8·9 } Winter quarter, 25·6 cases.
„ March	-	-	8·3
„ April	-	-	9·2
„ May	-	-	9·3 } Spring quarter, 28·7 „
„ June	-	-	10·2
„ July	-	-	7·6
„ August	-	-	6·1 } Summer quarter, 20·0 „
„ September	-	-	6·3
„ October	-	-	7·6
„ November	-	-	8·8 } Autumn quarter, 25·7 „
„ December	-	-	9·3
			100·0 1·00

The autumn and winter quarters appear to be alike in respect of the prevalence of hooping cough. The spring quarter is that in which I have observed that the disease prevails most, and the summer that in which it prevails least. The largest proportion of cases was observed to occur in the whole in the month of June, and the smallest in the months of August and September. The short period of time which elapses between the period of greatest and least prevalence is remarkable, the decline of the disease as summer comes on being very sudden.

The following represents the average meteorological conditions of the weeks about the period of the spring rise and subsequent sudden fall, and of the autumnal rise. I assume about a week as the period of incubation; probably it is something less than this, but it is not likely that medical aid would be sought until the disease was tolerably pronounced. I allow a week, then, in the table as a fair correction. I begin from the twelfth week of the year, thus to correspond with the last week of the winter quarter.

—	Average of new Cases, One Week later.	Mean Temperature.	Mean daily Range of Temperature.	Mean Humidity.	Mean Rainfall.	Rainy Days, 12 Years.
		°	°		Inches.	
week	8·0	40·9	15·0	81	0·41	33
„ -	7·7	45·4	15·8	81	0·38	45
„ -	6·6	46·6	17·4	82	0·38	34
„ -	*8·2*	*46·6*	*17·4*	*81*	*0·44*	*40*
„ -	9·6	48·2	20·3	75	0·14	19
„ -	8·1	49·1	18·9	79	0·50	32
„ -	8·3	49·2	19·2	74	0·22	23
„ -	8·5	52·9	21·3	76	0 67	35
„ -	7·8	53·7	19·6	78	0·53	32
„ -	7·7	54·8	22·2	74	0·44	20
„ -	*9·5*	*57·8*	*21·1*	*76*	*0·82*	*33*
„ -	9·3	58·5	20·5	78	0·63	32
„ -	9·4	58·8	21·8	74	0·35	26
„ -	*8·6*	*60·2*	*22·0*	*75*	*0·47*	*32*
„ -	7·2	60·4	20·7	74	0·48	32
„ -	6·5	59 9	21·5	74	0·40	29
„ -	6·5	63·6	23·7	73	0·23	17
„ -	6·5	63·5	20·2	73	0·59	30
„ -	5·6	62·0	21·4	73	0·63	25
„ -	5·3	61·1	22·4	71	0·39	28
„ -	6·0	62·4	21·2	76	0·65	38
„ -	4·3	62·2	20·0	76	0·40	34
„ -	6·8	60·8	19·3	78	0·74	34
„ -	5·9	59·8	19·9	76	0·38	31
„ -	4·8	60·3	18·9	79	0·48	34
„ -	4·2	58·7	16·3	78	0·50	33
„ -	*6·0*	*56·7*	*16·2*	*79*	*0·40*	*33*
„ -	6·2	55·5	17·1	84	0·55	37
„ -	6·8	54·5	16·2	83	0·37	27
„ -	6·7	52·5	15·1	87	0·50	37
„ -	6·9	51·2	14·3	88	0·87	46
„ -	7·6	48·8	14·1	89	0·54	35
„ -	8·0	46·7	14·8	88	0·47	41

om which it appears that, 1st. The spread of hooping cough is pro-d by a mean temperature above 46°, and especially by a temperature een 57° and 60°. 2d. That a mean temperature above 60° is very vourable to the disease, and distinctly promotive of its decline when emic. 3d. That a mean temperature below 40° is also less favour- than one between 40° and 46°, but more favourable than a mean erature above 60°. I have had some reason to suspect that a high metric pressure is favourable to the occurrence of the convulsive tions of children, but there is no connexion traceable between this the extension of hooping cough.

able VI. shows for each quarter the more important meteorological litions of the seasons in which hooping cough was more or less alent. From this it appears, 1. That in all seasons of the year, the exception of autumn, the extension of hooping cough is pro-d by a comparatively warm and dry atmosphere; in the autumn a n and moist season appears to be most favourable to it. 2. In spring and summer the unfavourable influence of atmospheric ture and much rain is especially obvious. Great atmospheric dry- and little rainfall appear capable of counteracting to some extent operation of a temperature above 60°, as in the summer of 1868. Table VI., pp. 70, 71.)

TABLE VI.

WINTER QUARTERS.

Of greater Prevalence of Hooping Cough.						Of less Prevalence of Hooping Cough.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1858	95	37·9	81	3·41	20	1857	41	36·3	85	3·79	35
1859	123	43·3	83	2·55	33	1860	40	38·9	82	3·80	52
1861	150	39·7	89	4·96	40	1862	56	40·6	86	5·73	43
1864	106	38·2	82	4·27	37	1863	83	42·5	83	4·08	35
1865	98	36·6	82	5·94	45	1867	92	38·5	83	6·29	51
1866	184	41·2	83	9·55	51	1868	97	41·1	82	6·52	46
Mean -	126	39·9	83	5·11	37	Mean -	68	39·6	84	5·03	43

SPRING QUARTERS.

1858	125	54·7	72	5·07	30	1857	61	54·3	76	4·06	31
1861	158	51·6	81	4·73	30	1859	55	54·2	77	6·40	29
1865	154	56·3	72	7·24	24	1860	45	50·5	80	10·36	49
1866	193	52·9	75	8·00	35	1862	64	53·1	82	7·61	46
1868	248	55·1	74	4·22	21	1863	90	52·6	77	5·99	34
						1864	49	53·5	73	3·48	22
						1867	76	54·3	77	6·27	39
Mean -	175	54·1	75	5·85	27	Mean -	62	53·2	78	6·31	35

Of greater Prevalence of Hooping Cough.						Of less Prevalence of Hooping Cough.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1858	58	61·0	74	5·39	29	1857	46	63·3	77	5·73	30
1861	115	60·4	78	4·20	43	1859	27	62·8	73	7·10	33
1863	142	59·1	74	5·18	27	1860	51	56·3	85	9·12	52
1865	137	62·5	75	6·41	29	1862	59	60·2	81	5·75	33
1866	103	58·7	80	7·93	45	1864	52	59·4	71	4·37	24
1868	89	64·1	70	4·40	23	1867	34	59·7	78	11·40	35
Mean -	107	61·0	75	5·58	32	Mean -	44	60·3	78	7·24	34
AUTUMN QUARTERS.											
1857	70	47·4	92	5·56	23	1859	54	43·0	87	7·18	48
1858	94	43·5	87	3·11	31	1861	49	46·4	88	7·23	35
1860	128	42·8	89	4·59	35	1864	49	43·6	82	4·13	29
1862	100	45·6	89	7·04	40	1867	68	43·1	87	4·52	37
1863	166	47·3	86	4·48	34						
1865	139	46·1	88	8·92	46						
1866	106	46·5	87	5·36	41						
1868	161	45·8	87	8·61	48						
Mean -	120	45·6	88	5·95	37	Mean -	44	44·0	86	5·76	37

Small Pox.

The 1,977 cases of small pox were distributed through the 12 y thus :—

In 1857	- 28	or	2·1	per 1,000	of all cases.
„ 1858	- 42	„	3·0	„	„
„ 1859	- 65	„	4·3	„	„
„ 1860	- 138	„	6·3	„	„
„ 1861	- 27	„	1·1	„	„
„ 1862	- 76	„	3·1	„	„
„ 1863	- 488	„	18·2	„	„
„ 1864	- 89	„	3·7	„	„
„ 1865	- 209	„	8·9	„	„
„ 1866	- 318	„	11·5	„	„
„ 1867	- 329	„	12·0	„	„
„ 1868	- 168	„	5·1	„	„

We have to note here a gradual increase of small pox year by y from 1857 to 1860, when it exhibited an approach to epid prevalence ; then a sudden reduction in the next year, 1861, increase in 1862, and the grand epidemic outburst of 1863. Agai the year after the epidemic, in 1864, a diminution of small pox al proportional to what took place after 1860. Since 1864 small p has been increasing in prevalence year by year until 1868, when in middle of August it almost abruptly died away from among our popul tion. From the second week in August until the second week November only three cases, at long intervals, were recorded in t books to which I had access. A prolonged freedom from small pox su as this had not occurred in Islington since the middle of 1862. I ma say here, by way of anticipation, that in no week of all the 11 yea prior to 1868 did the mean temperature of any week exceed 71°, an that temperature only was attained in the 28th week of 1859 ; nor i any week prior to 1868 did the mean of the highest day temperatu reach above 86°, and that was in the same week. In the four weeks July 1859 the means of the maximum temperatures were 81·4 86·5°, 82·6°, and 79·0°. Nothing approaching so prolonged a hig temperature in the daytime occurred again until last year. In the secon week of July 1868, the mean of the maximum temperatures of the wee was 79·8 ; in the third, 86·0° ; in the fourth, 84·4° ; in the first wee of August, 81·7° ; and in the second, 83·6°. The mean temperature the third week of July was 70·7° ; of the fourth, 69·2 ; of the first wee of August, 67·6° ; and of the second, 69·8°.

Whatever, then, the causes may have been which for so many year past have fostered small pox, the cause of the disappearance of th disease in August last is scarcely possible to be overlooked. The effor made since 1863 to render the vaccination of our population more com plete and perfect have probably saved us, during 1866 and 1867, fro an epidemic more serious even than that of 1863, which itself was thre times more serious than that of 1860 ; but it is clear that the cessatio of the plague has been the result of climatic conditions.

Diagram 26 shows the seasonal line of small pox as it has pursue its course on the average of the 12 years. Small pox, like scarlatin forms but one wave in the course of the year. Its prevalence in th several months and quarters may be represented thus per 100 cases :—

January	8·7		
February	8·0	Winter quarter,	27·1 cases.
March	10·4		
April	11·8		
May	14·3	Spring quarter,	35·8 „
June	9·7		
July	7·2		
August	6·1	Summer quarter,	17·9 „
September	4·6		
October	4·6		
November	6·7	Autumn quarter,	19·2 „
December	7·9		
	100·0		1·00

ule has been for small pox to prevail least in the summer, to through the autumn and winter, and to prevail most in the f the year. The smallest number of cases on the whole was l in the months of September and October; the wave rose y through the succeeding months (with a slight check in y), to attain its highest point in the month of May. From this sank rapidly through July and August, to attain its lowest gain in September. Small pox is therefore clearly a disease the on of which is promoted by cold weather and checked by hot .

y consideration of its association with conditions of weather an ce of about a fortnight must be made for the incubation of the

he average of the 12 years we may regard the disease at its oint in the month of October, and the commencing increase to ken place about the first week in November. The meteoro- conditions on the mean of the 12 years about this time were as :—

	Average of new Cases Two Weeks later.	Mean Tempera-ture.	Mean daily Range of Tempera-ture.	Mean Humidity.	Mean Rainfall.	Rainy Days, 12 Years.
		°	°		Inches.	
k	1·2	55·5	17·1	84	0·55	37
-	1·9	54·5	16·2	83	0·37	27
-	1·2	52·5	15·1	87	0·50	37
-	1·8	51·2	14·3	88	*0·87*	46
-	2·0	48·8	14·1	89	0·54	35
-	3·1	46·7	14·8	88	0·47	41
-	3·1	43·0	13·1	87	0·30	24
-	3·9	41·6	12·7	88	0·49	30

l pox, then, may be considered as beginning to extend when the ature at the commencement of the autumn begins to fall to about er which the disease becomes more and more prevalent as the ature continues to sink, and again as beginning to rise towards ng of the year. On the average of years the largest number s was observed in the 21st week of the year, immediately after in the 22d week, the number of cases fell remarkably. The

following are the means of the meteorological conditions of the seven weeks about this time :—

—	Average of new Cases Two Weeks later.	Mean Temperature.	Mean daily Range of Temperature.	Mean Humidity.	Mean Rainfall.	Rainy Days 12 Years
		°	°		Inches.	
17th week	4·6	49·1	18·9	79	0·50	32
18th „ -	5·0	49·2	19·2	74	0·22	23
19th „ -	6·5	52·9	21·3	76	*0·67*	35
20th „ -	3·9	53·7	19·6	78	0·53	32
21st „ -	3·6	54·8	22·2	74	0·44	20
22nd „ -	3·7	57·8	21·1	76	0·82	33
23rd „ -	3·4	58·5	20·5	78	0·63	32
24th „ -	3·6	58·8	21·8	74	0·35	26
25th „ -	3·2	60·2	22·0	75	0·47	32
26th „ -	3·2	60·4	20·7	74	0·48	32
27th „ -	2·0	59·9	21·5	74	0·40	29

Reading this with the preceding table, it appears that the mean tem perature of about 52° is that which marks off the conditions favourab or unfavourable to the extension of small pox. A temperature bel this promotes its spread, and a temperature above it tends to check spread. It is clear, however, that this observation can only apply the country in which it has been made, or to one presenting simil climatic conditions.

Table VII. shows the more important meteorological conditions whi were existent in the several quarters in which small pox was more less prevalent. (See Table VII., pp. 75, 76.) From which it appears:-

1. That with the exception of the spring and summer quarters, the latter of which excessive heat is apt to check the spread the disease, small pox is promoted by a comparatively war season.
2. That in all seasons of the year comparative atmospheric dryness more conducive to the spread of small pox than comparati humidity of the atmosphere.
3. That in every season except the autumn, there was on the whole greater rainfall in the years of greater prevalence of small p than in those of its lesser prevalence.

I may add further, that making the fortnight's allowance for incub tion, great rises or falls of temperature appear to promote the extensi of small pox in seasons when it prevails. In this it resembles measle The alleged connexion between epidemics of small pox and measl may be studied upon the diagrams.

1. As regards the slighter small pox outbreak of 1860, it is observabl that although 1859 was not a year on which an epidemic of measles w due, yet, for a non-epidemic year, the disease was unusually prevale during the three first quarters; it subsided during the autumn, and sma pox broke out in the first month of 1860. As small pox subsided May and June, measles again became severely epidemic.

2. In 1862 a heavy epidemic of measles occurred, the principal vi lence of the outbreak being expended upon the months of June and Jul It subsided through August and September. In November the gra epidemic of small pox commenced, the disease spreading extensive in the month of December. In November and December measles b came concurrently active. It subsided, however, as small pox gain

Winter Quarters.

Of greater Prevalence of Small Pox.

Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.	
1860	58	38·9	82	3·80	52
1863	88	42·5	83	4·08	35
1866	66	41·2	83	9·55	51
1867	121	38·5	83	6·29	51
1868	65	41·1	82	6·52	46
Mean -	79	40·4	83	6·04	47

Of less Prevalence of Small Pox.

Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfal.	Rainy Days.
		°		Inches.	
1857	5	36·3	85	3·79	35
1858	13	37·9	81	3·41	20
1859	16	43·3	83	2·55	33
1861	32	39·7	89	4·96	40
1862	3	40·6	86	5·73	43
1864	22	38·2	82	4·27	37
1865	45	36·6	82	5·94	45
Mean -	19	38·9	84	4·37	36

Spring Quarters.

1860	37	50·5	80	10·36	49
1863	291	52·6	77	5·99	34
1865	62	56·3	72	7·24	24
1866	74	52·9	75	8·00	35
1867	102	54·3	77	6·27	39
1868	68	55·1	74	4·22	21
Mean -	105	53·6	76	7·01	32

1857	13	54·3	76	4·06	31
1858	3	54·7	72	5·07	30
1859	14	54·2	77	6·40	29
1861	10	51·6	81	4·73	30
1862	2	53·1	82	7·61	46
1864	23	53·5	73	3·48	22
Mean -	10	53·6	77	5·22	31

TABLE VII.—*continued.*

SUMMER QUARTERS.

Of greater Prevalence of Small Pox.						Of less Prevalence of Small Pox.					
Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.	Years.	New Cases.	Mean Temperature.	Mean Humidity.	Total Rainfall.	Rainy Days.
		°		Inches.				°		Inches.	
1858	22	61·0	74	5·39	29	1857	1	63·3	77	5·73	30
1863	73	59·1	74	5·18	27	1859	13	62·8	73	7·10	33
1865	77	62·5	75	6·41	29	1860	12	56·3	85	9·12	52
1866	66	58·7	80	7·93	45	1861	2	60·4	78	4·20	43
1867	36	59·7	78	11·40	35	1862	7	60·2	81	5·75	33
						1864	19	59·4	71	4·37	24
						1868	20	64·1	70	4·40	23
Mean -	54	60·3	76	7·26	33	Mean -	10	60·9	77	5·81	34

AUTUMN QUARTERS.

1862	64	45·6	89	7·07	40	1857	4	47·4	92	5·56	23
1863	36	47·3	86	4·48	34	1858	7	43·5	87	3·11	31
1866	112	46·5	87	5·36	41	1859	13	43·0	87	7·18	48
1867	70	43·1	87	4·52		1860	12	42·8	89	4·59	35
						1861	5	46·4	88	7·23	35
						1864	25	43·6	82	4·13	29
						1865	25	46·1	88	8·92	46
						1868	15	45·8	87	8·61	48
Mean -	70										

gth during the early months of 1863. The chief violence of small in this year was expended upon the months of May and June, ig which the ordinary spring increase of measles was observed. The of 1863 and beginning of 1864 witnessed the reduction of small pox small number of cases, and in February measles again broke out, ommencement of a severe spring epidemic.

The slighter small pox epidemic of 1867 was again preceded by a y epidemic of measles in 1866, and its subsidence in 1868 by another y epidemic, lasting from May till the end of the year.

feel that in this paper I have only skimmed the surface of a very esting and important investigation, but perhaps it will be considered the inferences drawn are as much as the records at my disposal e for. Probably a deeper study of the diagrams may suggest others; es so to myself. The area from which the observed facts are n is comparatively a very limited one. I am conscious that my ences can only therefore be regarded as provisional. I am aware ut very few places in which a regular registration of sickness among poor has been attempted, and of no place where it has been steadily ied on for so many as 12 years, except in Islington. But I think ve indicated the important scientific results which would follow a national registration of sickness established. I can testify from rience how small the amount of labour would be in effecting such a stration in each district of the kingdom. At the present time there t everywhere abundant materials in the books kept by poor law ical officers, and at the various public institutions for the relief of ness, but they are unused because it is nobody's business to collect n together. Were this done it would be possible to distinguish veen the liability of different districts to diseases of certain kinds, the difference in fatality which attends them in different places. s is a matter of no small moment, since the causes which occasion ter or less liability to suffer from a malady may be very different n those which render attacks more or less fatal. Moreover, the laws ch govern the outbreak and spread of epidemic maladies might be rly brought out, and perhaps it may not be too much to anticipate in the progress of years facts enough might be collected on which ase a prognostication of disease.

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he diagrams will now explain themselves. All that is necessary to add at the small figures below each weekly rainfall signify the number of s on which rain fell in appreciable quantity.

No. 4.—Report, by Mr. William W. Wagstaffe, on the Quantity and Kinds of Venereal Disease under Treatment at certain Charitable Institutions in London.

Venereal diseases: division of.

In the following report the term (A) *syphilis* has been applied to (1) the *infecting chancre* and its results, dividing these latter into (2) *constitutional* and (3) *hereditary*. The non-infecting or *soft chancre* (B) not producing any necessary effects upon the health of the individual or their children, but being a mere local disease, has been separated from the other venereal affections; and (C) *gonorrhœa* as being a disease distinct from the others, and of more or less special character, has been placed by itself. The term "*Venereal*" has been used to embrace all the above affections, syphilitic and non-syphilitic, which are traceable to contagion.

Doubtful cases excluded.

Cases of doubtful character have been excluded from the accompanying tables, but they were not in sufficient number to materially influence the results.

Line of inquiry.

In order to obtain a fair statement of the proportion of cases of venereal disease among the London sick poor, I have, in accordance with instructions, visited one or more of each of the different kinds of institutions which minister to the relief of such persons; general hospitals, special hospitals, dispensaries, and workhouse infirmaries. From the more important of these institutions I have, with the willing permission of the authorities, obtained the returns personally and am responsible for the diagnosis of the venereal disease in the cases upon which the tables are founded; and in other instances, where I was myself unable to attend, returns have been promptly supplied by the authorities or by trustworthy observers attached to the institution.

In regard to the cases included in this report, it may be stated that only those have been entered as venereal, where the disease for the relief of which the applicant presented himself was due directly or indirectly to some form of venereal affection, and no entry has been made of those who at some previous time in their lives have had one or other kind of such disease. In fact, it would be next to impossible to arrive at the truth if the latter line of inquiry had been taken.

Returns distinguished into departments,

It has been thought better to keep separate the returns for disease among out-patients from those referring to the in-patients of the different institutions, as the class of patients differs materially in the two cases, and also, since the returns which have been previously published on the subject have referred to special departments, to give the full statistics of the different departments into which the out-patient practice is divided.*

and according to sex and age.

It has also been felt desirable, in order to obtain a correct notion of the proportion of each sex affected with venereal disease, to distinguish males, females, and children as far as possible. This, however, was proved to be a difficult matter, for in none of the hospitals or institutions visited is this distinction ordinarily made. In the majority the returns are given under the two headings of "male" and "female," and the children in some cases are entered according to their sex, and in others are numbered with the women. In some institutions there is not even

* The tables printed in this report are summaries of more detailed tables also presented.

i distinction made, and a return is made in mass of the number of ·nts seen, regardless of their age or sex. The limit of age for ·ildren" for the purpose of the inquiry has been assumed at about ·r rather puberty, as (although in two instances acquired venereal ·se was seen at the respective ages of six and ten, one from rape) as considered that the age of puberty best marks the time below ·h the direct acquisition of any venereal affection is improbable.

In making these inquiries I have in the case of out-patients taken the ·portion of venereal disease among the whole number of patients pre- ·ing themselves during a definite time, one week at the large general ·pitals, and two or three days at the dispensaries, and have as carefully ·ossible avoided counting any patients, whether venereal or non- ·real, a second time, when they attended more than once during the that institution was under observation. In regard to in-patients, ·ve followed my instructions in taking the proportion of venereal ·ng them on single days only.

It seems to be the general opinion among the medical officers that the ·unt of venereal disease (especially among in-patients) is not so large ·e present season of the year (August) as during the winter months, the explanation given is that during the summer, and especially at ·present time, men and women do not care to give up the time neces- for treatment in or out of doors, when the plentifulness of harvest ·other work gives them the chance of earning good wages. This ·n, however, would account for a diminution in the total number of ·nts, as well as in those affected by the particular class of diseases in tion, so that the ratio of the one class of total sickness might be the as usual, except in one respect, viz., that a much larger proportion ·en would probably be drawn off by the summer full work, and as per-centage of venereal is much higher among them than among ·en attending as patients, in this manner the total proportion of ·real disease may be somewhat lessened during the summer season ·ng such patients.

Returns have been obtained from among out-patients at the following ·utions :— St. Bartholomew's Hospital, St. Thomas's Hospital, ·eorge's Hospital, for one week each ; Royal Free Hospital, for days ; Western General Dispensary, for two days ; Finsbury Dis- ·ary, for three days ; Farringdon Dispensary, for three days ; Surrey ·ensary, for 2 days ; Stanhope Street Dispensary, for two days.

Institutions under observation.

nd from among in-patients at the following :—St. George's Hospital, ·don Hospital, Royal Free Hospital, Female Lock Hospital, Male ·k Hospital, Lambeth Workhouse Infirmary, St. Pancras Workhouse ·mary. The returns from these, as before mentioned, have refer- to the patients actually under treatment on one single day in each ·tution.

Out-patients : (1) of General Hospitals.

Out-patients. General hospitals.—

·lthough not within the immediate objects of this inquiry, it cannot ·ut of place to give prominent notice here to the deficiency of reliable ·rds of the out-patient practice at all the public medical institutions ·ted.

Deficiency of reliable records.

·or the purpose of clinical instruction such records would be most ·able, and in fact are almost essential to that form of teaching, and ·quiries of the nature of the present one they would also be of the ·ost value. For either use, it is of course necessary that their cor- ·ness should be guaranteed by proper supervision. At the present

time none even of the general hospitals which were visited possessed the means of showing, with any approach to accuracy, the proportion of any kind of disease treated among its out patients. A rough entry-book was certainly sometimes kept, but the entries in this were, in the majority of cases, made by junior students, or else by non-medical officials, and in neither case was there any attempt at exactness. There appeared to be no one whose duty it was to overlook these records, or to compile any results from them.

For the following out-patient statistics, all the departments into which that practice is divided have been included; but it has seemed advisable, in recording totals, not to take into consideration the cases of primary accident, *i.e.*, those applying shortly after an accident has happened, as such patients are not of a class fairly comparable with the rest of hospital out-patients. The totals on the Out-patient Tables, relate, therefore, to patients suffering more or less directly from what may be termed "disease," in contradistinction to accident.

Tabulation of returns.

Six tables (I., Ia., Ib., II., IIa., III.) have been prepared from the results obtained from the out-patient practice of general hospitals and dispensaries. Of these, tables I., Ia., Ib., refer to general hospitals only; tables II., IIa. to dispensaries; and table III. combines the results obtained from the inspection of the total out-patients (9,363), seen at both classes of institutions. The different departments of out-patient practice at general hospitals, which have, for reasons before stated, been kept distinct, are as follows:—1. Surgical out-patients, under the care of the assistant-surgeon; 2, surgical casualties; 3, ophthalmic patients; 4, medical out-patients under the care of the assistant physician; 5, medical casualties; 6, special department for diseases of women and children; and 7, department for skin diseases. The sexes have been distinguished, and children separated from women, where such a course has been found possible.

Except where otherwise stated, the returns have been obtained by myself.

Sources from whence returns obtained.

The following are the points which it appears necessary to note concerning the specialities of the out-patient practice at each hospital visited; and here I desire to record the names of the gentlemen to whom I am indebted for assistance in each department.

St. Bartholomew's.—Five departments formed the subject of inquiry at this hospital, and I have to acknowledge with pleasure the readiness with which all the officers of the institution assisted me by giving information, and by putting their patients at my disposal for examination:—1, the surgical out-patients' department, under the care of the assistant-surgeon, and including the ophthalmic and aural practice; 2, the surgical casualty department. The patients here were very numerous, and were carefully tabulated by the house surgeon; 3, the medical out-patients were noted by the assistant physicians in attendance (Drs. Southey, Church, and Gee); 4, the medical casualties; and 5, the department for diseases of women and children included no cases of venereal disease, as such are at once transferred to the surgical authorities.

St. Thomas's Hospital.—Seven departments are recognized here among the out-patients. 1. The surgical out-patients under the care of the assistant-surgeons. 2. The surgical casualties under the care of the house surgeons and dressers in which the returns were rendered by the former. 3. The ophthalmic out-patients. 4. The medical out-patients, for the accounts of which I am indebted to Dr. Clapton, the assistant physician. 5. The medical casualties seen by the resident medical officer or his assistant. 6. The department for skin diseases, the returns from which are furnished by Dr. Bristowe. 7. The obstetric special children's department under the care of Dr. Barnes and Dr. Gervis, who supplied the returns for this department.

ST. BARTHOLOMEW'S:																								
Gonorrhœa, &c.	29	16	0	73	20				0	0	0	0	0						102	36	0	138
Soft chancre	13	7	0	9	0				0	0	0	0	0						22	7	0	29
Syphilis acquired	66	27	0	21	4				8	6	0	0	0						87	31	0	118
Do. hereditary	0	0	8	0	1				0	0	0	0	0						0	0	9	9
Venereal	108	50	8	103	25	—	—	—	8	6	0	0	0	—	—	—	—	—	211	74	9	294
No. of out-patients	160	195	139	188	261	177	28	74†	168	171	27	77	24	278	67	20	24	23	591	1,080	430	2,101
ST. THOMAS'S:																						
Gonorrhœa, &c.	31	2	0	23	3	0	1	0	0	0	0	0	0	0	0	0	0	0	55	5	0	60
Soft chancre	4	1	0	3	2	0	0	0	0	0	0	0	0	1	0	0	0	0	7	4	0	11
Syphilis acquired	25	22	0	3	2	0	4	5	2	1	0	0	0	3	0	2	0	0	36	33	0	69
Do. hereditary	0	0	2	0	0	0	1	0	0	1	0	0	0	3	2	0	0	0	1	4	4	9
Venereal	61	25	2	29	7	0	6	5	2	2	0	0	0	7	2	2	0	0	99	46	4	149
No. of out-patients	142	187	80	0	0	0	17	39	21	147	280	71	0	0	0	31†			0	0	0	306	537	172	1,015
ST. GEORGE'S:																						
Gonorrhœa, &c.	18	2	0	—	—	—	0	0	0	1	0	0				0						19	2	0	21
Soft chancre	6	0	0	—	—	—	0	0	0	0	0	0				0						6	0	0	6
Syphilis acquired	15	15	0	—	—	—	0	1	0	1	2	0				0						26	18	0	44
Do. hereditary	0	0	2	—	—	—	0	0	1		0	0				0						0	0	3	3
Venereal	39	17	2	—	—	—	0	1	1	12	2	0	—	—	—	0			—	—	—	51	20	3	74
No. of out-patients	341	160	48	55	65	19	0	0	0	328	439	35	0	0	0	0	0	0	0	0	0	724	664	102	1,490
ROYAL FREE:																						
Gonorrhœa, &c.	99	8	0	0	0	0				4	2	0										103	10	0	113
Soft chancre	23	2	0	0	0	0				0	0	0										23	2	0	25
Syphilis acquired	43	27	0	0	0	0				25	19	0										68	46	0	114
Do. hereditary	0	0	3	0	0	0				0	0	1										0	0	4	4
Venereal	165	37	3	0	0	0	—	—	—	29	21	1	—	—	—	—	—	—	—	—	—	194	58	4	256

* The time of observation was a week in the case of St. Bartholomew's, St. Thomas's, and St. George's respectively, and four days at the Royal Free.
† In these cases women and children were not taken separately.
NOTE.—Where lines are drawn obliquely across the spaces the special department was not represented.

TABLE Ia.

PER-CENTAGE SUMMARY of VENEREAL DISEASES occurring among OUT-PATIENTS at General Hospitals.

Departments.	Surgical Out-patients.				Surgical Casualties.				Ophthalmic.				Medical Out-patients.				Medical Casualties.				Special Women and Children.				Skin.				Total according to Sex.			
	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.
St. Bartholomew's	37·89	15·82	10·81	23·11	32·89	11·00	0	24·06	—	—	—	—	0·39	2·23	0	3·54	0	0	0	0	0	0	0	—	—	—	—	15·11	3·45	10·81	8·14
St. Thomas's	37·50	12·82	1·43	17·61	15·42	2·68	0	5·78	17·85	6·75	(·98)	10·78	1·19	·58	0	1·18	0	0	0	0	1·43	2·98	2·60	10·0	0	0	2·9	16·57	3·88	·9	7·09
St. George's	27·45	9·08	2·50	14·18	0	0	0	0	0	2·56	4·76	2·59	8·16	·71	0	2·81	—	—	—	—	0	0	0	—	—	—	—	16·29	3·88	1·17	7·22
Royal Free	48·38	23·12	6·24	37·34	0	0	0	0	—	—	—	—	8·83	4·78	2·85	6·36	—	—	—	—	—	—	—	—	—	—	—	26·78	8·72	3·92	17·17

TABLE Ib.

Particular forms of VENEREAL, per cent. of total PATIENTS irrespective of Age and Sex, under Treatment as OUT-PATIENTS at General Hospitals.

	St. Bartholomew's.	St. Thomas's.	St. George's.	Royal Free.
Gonorrhœa or complications	3·82	2·85	2·05	7·58
Soft chancre	·80	·52	·58	1·67
Syphilis acquired	3·51	3·71	4·59	7·92
Do. hereditary				

eorge's Hospital.—At this hospital five departments are recognized the out-patients. 1. The surgical out-patients under the care of the t-surgeons. 2. The surgical casualties comprise only accidents and at cases, and are therefore not taken into consideration in the statistics. the return of medical cases I am indebted to the kindness of the assistant ns (Drs. Dickinson and J. W. Ogle). 4. The women's special depart- nder the care of Dr. J. Clarke, showed no cases of venereal. 5. The mic out-patients.

proportion of venereal is rather less among the assistant surgeons' l out-patients than at either of the other two general hospitals, (14 per ainst 17 and 23 per cent.,) and this is more marked among the males of partment, for it will be seen that at St. George's 27 per cent. of males cted against 37 per cent. among the assistant-surgeons' out-patients at tholomew's and St. Thomas's.

al Free Hospital.—The surgical out-patient here comprised an lly large number of venereal cases in comparison with other general ls. At this institution there seems to be a tendency to make a speciality class of diseases, owing partly to the original associations of the place,* tly to the fact that the name and reputation of the hospital lead many ose no questions are asked and no trouble is necessary in order to obtain f an out-patient.

per-centage of venereal among the surgical males here rises to nearly ne out of every two seen, and for all sexes and ages in this department 4, or more than one out of three; while the total per-centage for all sexes partments among the out-patients reaches to over 17 per cent.

notes of the cases occurring on the medical side were made by Dr. , late of St. Thomas's Hospital, who was present during the four days titution was under observation and fully satisfied himself of the correct- the details collected.

ng the surgical casualties no cases of venereal occurred.

Out-patients (2) of Dispensaries.

Dispensaries.

urns were supplied from the following:—1. Western General sary, Marylebone Road, by Mr. John Waller, the Resident l Officer, 2. Finsbury Dispensary, Woodbridge Street, by Mr. J. May, Resident Medical Officer. 3. Farringdon Dispensary, Medical Officers. 4. Surrey Dispensary, by Mr. F. W. Smith, Surgeon. 5. The Public Dispensary, Stanhope Street, by Mr. Morris, M.B., House Surgeon.

Why proportion of venereal disease among these is small.

much smaller proportion of venereal disease is to be noticed in returns than in those from the general hospitals. The explanation, however, of this is apparent. In all the dispensaries, the production of a Governor's letter is necessary before a patient can be seen by a surgeon or physician, and a large number, if not the majority of patients are connected by ties of dependence with the donors of the letters. Persons suffering from contracted venereal disease will hesitate long for a letter under these circumstances with the almost absolute certainty of being asked by the governor the nature of their malady, especially when hospitals are at hand offering treatment without fear of disease becoming known elsewhere.

Hereditary syphilis.

The reason bears upon all dispensaries, and in addition there is among them a rule, expressed or traditional, that primary venereal cases are not fit objects for the charity of the governors.

The proportion of cases of hereditary syphilis at dispensaries may fairly be looked upon as more correct for sick children generally,

* hospital was founded ostensibly for the relief of the most destitute poor, who t get letters of recommendation to the other hospitals; and of this class of prostitutes formed a notable proportion.

TABLE II.

OUT-PATIENTS of DISPENSARIES.

TOTAL NUMBERS.

	Western General Dispensary. (2 Days.)				Finsbury Dispensary. (3 days.)				Farringdon Dispensary. (3 days.)				Surrey Dispensary. (2 days.)				Stanhope Street Dispensary. (2 days.)				Totals according to Sex.			
	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.
Number of Patients seen	98	164	78	340	25	127	69	221	51	113	28	192	69	227	24	320	15	41	8	64	258	672	207	1,137
Gonorrhœa or Complications	2	0	0	2	0	0	0	0	6	1	0	7	1	0	0	1	3	0	0	3	12	1	0	13
Soft chancre	1	2	0	3	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2	3	0	5
Syphilis, acquired	2	3	0	5	0	2	0	2	3	3	0	6	0	1	0	1	0	1	0	1	5	10	0	15
Ditto, hereditary	0	0	7	7	0	0	2	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	10	10
Venereal of all forms	5	5	7	17	0	2	2	4	10	5	0	15	1	1	1	3	3	1	0	4	19	14	10	43

TABLE II a.

PER-CENTAGES.

Proportion per cent. of																								
Gonorrhœa or Complications	2·04	0	0	·59	0	0	0	0	11·76	·88	0	3·64	1·44	0	0	·31	20·0	0	0	4·70	4·65	·14	0	1·14
Soft chancre	1·02	1·22	0	·88	0	0	0	0	1·96	·88	0	1·04	0	0	0	0	0	0	0	0	0·77	·44	0	·44
Syphilis, acquired	2·04	1·82	0	1·47	0	1·57	0	·91	5·88	2·65	0	3·12	0	·44	0	·31	0	2·43	0	1·56	1·93	1·48	0	1·32
Ditto, hereditary	0	0	8·97	2·06	0	0	2·89	·91	0	0	0	0	0	0	4·16	·31	0	0	0	0	0	0	4·83	·88
Venereal of all kinds	5·10	3·04	8·97	5·00	0	1·57	2·89	1·82	19·60	4·41	0	7·80	1·44	·44	4·16	·94	20·0	2·43	0	6·26	7·36	2·08	4·83	3·78

nan at a large general hospital, where a comparatively larger · of acute cases is received, and where it is much more difficult, t the employment of special means, to separate accurately the r of children from the rest of the patients seen. It will be ed in the return that 4·83 per cent. of the sick children applied h isease traceable to syphilis in their parents.

Summary of Observations on Out-patients.

m the preceding tables it is evident that in the three general als (St. Bartholomew's, St. Thomas's, and St. George's), which ent most fairly the general hospitals of the Metropolis, a great nce exists in the several departments in regard of the prevalence nereal disease. By far the greater proportion appears in the al practice (including surgical out-patients, surgical casualties, and dmic out-patients) and a statement to the public of returns derived uch surgical out-patients alone would considerably exaggerate the ence of venereal generally among the sick poor of London. At artholomew's for instance, the proportion of venereal among al out-patients is over 23 per cent., whereas among the out- ts generally, excluding primary accidents it is just over 8 per .A similar difference is also observable at the Royal Free Hos- The returns from the dispensaries do not satisfactorily separate nedical from the surgical practice, but the same proportionate ence would probably not be found, as there is not usually the same en distinguishing between the two classes of cases.

At hospitals the proportion of venereal disease is very different in different departments of out-patients.

Close agreement in the returns from the general hospitals.

hough much larger numbers of patients always attend on the early of the week, I do not find that the proportion of venereal cases g them is appreciably different.

e three large general hospitals agree very closely as to their results t following per-centage figures will show.

Disease.	St. Bartholomews.	St. George's.	St. Thomas's.	Royal Free.
hœa - -	3·82	2·05	2·85	7·58
hancre - -	·80	·58	·52	1·67
lis - - -	3·51	4·59	3·71	7·92
real generally -	8·14	7·22	7·09	17·17

mpared with these the Royal Free Hospital presents a much larger entage, and the increase seems nearly equal in the three classes into h venereal disease is divided.

ne return from dispensaries gives a total of gonorrhoea 1·14 ; soft cre, ·43 ; syphilis, 2·19 ; giving a total per-centage of venereal, 3·78.

he total results of the foregoing returns from the out-patient depart- ts of different institutions collectively are embodied in Table III., by h it will be seen that of 9,363 out-patients in all departments of all charitable institutions visited, 8·71 per cent. were affected with real disease of some kind, and of these 3·68 were gonorrhœa, ·81 were chancre, 4·21 were syphilis.

Table III.

Total Venereal among Out-Patients of Hospitals and Dispensaries reported upon.

	Actual Numbers.					Per-centage Numbers.			
	Males.	Females.	Children.	Total.		Males.	Females.	Children.	All Ages and Sexes.
Number of Patients - -	3,282	5,097	984	9,363	Proportion per cent. of	100	100	100	100
Gonorrhœa or Complications	291	54	0	345	Gonorrhœa or Complications	8·86	1·06	0	3·68
Soft chancre - -	60	16	0	76	Soft chancre - -	1·82	·31	0	·81
Syphilis, acquired - -	222	139	0	361	Syphilis, acquired - -	6·76	2·73	0	3·85
Ditto, hereditary -	0	0	34	34	Ditto, hereditary -	0	0	3·45	·36
Venereal of all kinds -	573	209	34	816	Venereal of all kinds -	17·44	4·10	3·45	8·71

turns of in-patients affected with venereal diseases in different as are not sufficiently comprehensive to afford a basis for any eductions. I have therefore simply given the results in the V. and IV a.—Table IV. showing the total numbers, and IV a. ortions per cent., and have not attempted to combine them. xtended inquiry would be necessary before a fair judgment of the m of venereal disease among the in-patients generally of London could be formed. The plan has been adopted of taking the umber of patients in hospital on a particular day, noting the of venereal cases found among them; so that the returns repre- proportion of venereal in hospital on a specified day.

In-patients.—Manner in which returns were taken.

e return from St. George's Hospital I am indebted to the surgical Mr. Wm. Leigh, and may state it is his impression that the propor- ne present time is rather below their average of such cases.

Sources from whence obtained.

London Hospital the returns were made by the registrars (Mr. Tay Woodman), and they too are of opinion that their present number of cases is smaller than usual. St. Bartholomew's and Guy's Hospitals nished no returns. At the Royal Free Hospital, there is an even oportion of venereal cases among in-patients, as compared with other hospitals than was noticed among the out-patients, but this is not g when of the only two female wards in the hospital one is exclusively e to venereal affections.

the two workhouses of Lambeth and St. Pancras, I have with the on of the authorities personally investigated the venereal cases among ates of the infirmaries, and the great difference in the results obtained some explanation. Lambeth shows a per-centage of 2·53 venereal the infirmary, while in St. Pancras it amounts to 10·6. In the Lambeth ry, however, the proportion of venereal to total diseases is due to the t a much larger proportion of cases of senile debility are lodged there St. Pancras; in fact, the excess in the actual number of inmates in h Workhouse Infirmary over those in St. Pancras is completely made atients suffering from old age rather than from any actual disease. In ner, the number of patients in the infirmary is 315 out of a total of 944 workhouse, while at St. Pancras (the old people being lodged else- only 132 out of 1,645 are infirmary patients. If the proportion of d cases to the whole number of inmates be taken, the results for the two uses would be found almost identical, being 0·84 per cent. for th, and 0·85 per cent. for St. Pancras.

PATIENTS OF SPECIAL LOCK HOSPITALS.

Special hospitals.

rder to obtain further materials for determining the quality of lent venereal disease, I have applied for and obtained returns the Female Lock Hospital and from the Male Lock Hospital gh the kindness of their respective medical officers, Mr. F. J. all and Mr. C. H. Lister.

. Berkeley Hill has also forwarded me a report of the out-patients his care, from the commencement of the present year to June

om these it would appear that the number of cases of gonorrhœa g in-patients at the special hospitals reported upon was proportion- much greater than any other forms of venereal. The out-patients not been classed in Mr. Hill's returns in the same manner, but ly into syphilitic and non-syphilitic, and show a proportion 41·5 per of the former against 58·5 per cent. of the latter. Tables setting n detail the facts about the nature of the venereal diseases treated ese hospitals accompany this report.

TABLE IV.

IN-PATIENTS of General Hospitals and WORKHOUSES.

TOTAL NUMBERS.*

	St. George's Hospital.				London Hospital.				Royal Free Hospital.				Lambeth Workhouse.				St. Pancras Workhouse.			
	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.	M.	F.	CH.	Total.
No. of Patients under Treatment	160	148	0†	308	293	154	30	477	44	37	0	81	116	178	21	315‡	50	63	19	132§
Gonorrhœa and Complication	1	1	0	2	1	1	0	2	0	6	0	6	0	0	0	0	1	2	0	3
Soft chancre	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	3	4	0	7
Syphilis, acquired	10	13	0	23	8	9	0	17	3	11	0	14	2	6	0	8	2	2	0	4
Ditto, hereditary	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0
Venereal of all kinds	11	15	0	26	9	10	4	23	3	20	0	23	2	6	0	8	6	8	0	14

TABLE IV a.

PER-CENTAGES.

Proportion per cent. of																				
Gonorrhœa and Complications	·62	·67	0	·65	·34	·65	0	·42	0	16·21	0	7·40	0	0	0	0	2·0	3·17	0	2·27
Soft chancre	0	·67	0	·32	0	0	0	0	0	8·10	0	3·70	0	0	0	0	6·0	6·34	0	5·30
Syphilis, acquired	6·25	8·78	0	7·46	2·72	5·84	0	3·56	6·81	29·73	0	17·28	1·72	3·36	0	2·53	4·0	3·17	0	3·03
Ditto, hereditary	0	0	0	0	0	0	13·33	·84	0	0	0	0	0	0	0	0	0	0	0	0
Venereal of all kinds	6·87	19·12	0	8·44	3·06	6·49	13·33	4·82	6·81	54·04	0	28·38	1·72	3·36	0	2·53	12·0	12·68	0	10·60

* NOTE.—These numbers represent the results of observations made on a single day in each institution.

† In the return from St. George's Hospital the children are not separated from females.

‡ NOTE.—The total number of inmates of Lambeth Workhouse, including infirmary and all departments, was 944, and the proportion of venereal sick was therefore 0·84 per

Table V.

In-Patients of Lock Hospitals.

	Female Lock.			Male Lock.			Total.	Proportion per cent.
	M.	F.	CH.	M.	F.	CH.		
Total number of patients -	0	123	0	15	0	0	138	0
Gonorrhœa or complications.	0	61	0	2	0	0	63	45·65
Soft chancre - -	0	28	0	7	0	0	35	25·36
Syphilis, acquired -	0	34	0	6	0	0	40	28·98
Ditto, hereditary -	0	0	0	0	0	0	0	0

Out-Patients of Lock Hospitals.

Under Treatment during six months at the Female Lock Hospital.

		Proportion per cent.
Number of patients -	378	
Non-syphilitic - -	157	41·53
Syphilitic - -	221	58·47

General Observations.

The foregoing returns have reference to the amount and kinds of venereal disease observed during a certain time at various charitable institutions in London; and it may not be amiss in conclusion to give an approximate of these proportions among the total sick poor of the metropolis.

Definition of the term "sick poor."

Confining the term "sick poor" to such as receive medical relief gratuitously at public institutions, and at the hands of the poor law administrators, it will be necessary, in order to obtain an idea of their numbers, to take them as follows: (A) those relieved at general hospitals, (B) those relieved at dispensaries and special hospitals, and (C) those receiving parochial medical relief.

Estimation of total numbers of sick poor of the metropolis.

The calculation of the total numbers relieved by these different means can only be an approach to the truth, for in many instances no returns are published or kept; in others there is no attempt whatever at accuracy; while at many of the charitable institutions there is a tendency greatly overstate the amount of real work done. From the actual returns where obtainable, and from other sources where no returns are available, it seems that the following will represent the total number of sick poor relieved during the year:

(A) At general hospitals, as shown by their returns	554,450
(B) At special hospitals and dispensaries, as shown by their returns - - - -	800,000
(C) By parish medical officers (calculated) -	180,000
Total - - - -	1,534,450

It appears further that those hospitals and dispensaries which have been the subject of this report minister to the relief of a very large proportion of the sick poor contained in classes (A) and (B)—as much,

in fact, as 25 per cent., or one-fourth. But it will evidently be incorrect to give the proportion of venereal diseases which occur among the patients (A) and (B) as the proportion of venereal diseases among t total sick poor of the metropolis. It will be necessary to add 25 p cent. of the parochial sick (C) before fair deductions can be made. would be a matter of considerable difficulty however to give the retu of this class of cases (C) with accuracy; it would require greater ti and labour than the results to be obtained would counterbalance. B I have computed it, I think not unfairly, by obtaining a return from ea of the medical officers of one of the largest unions (Lambeth). Fro these it would seem that 0·33 per cent. of the population, or one in 30 receive relief from the parochial medical officers in an average wee Taking the population to be about 3,000,000, it will follow that abo 9,900 are weekly under the hands of the parish medical officer, and or fourth of this number, or 2,475, must be added to the correspondi fourth of hospital and dispensary patients included in this repor Venereal in these parish out-patients is not treated by the parish doct but is accounted for in various hospital returns.

A week's return of one-fourth of the sick poor of London, showing the proportion of venereal cases among them.

The following will therefore represent a weekly return of the numb and proportion of venereal cases during about a week's observation in-patients, out-patients, and parish cases among about one-fourth of t whole population of the metropolis :—

Class of Patients.	Total Number reported on.	Number of Venereal Cases.	Proportion Venereal Ca per cent.
In-patients of hospitals, dispensaries, and workhouse infirmaries - - -	1,313	94	7·16
Out-patients of hospitals and dispensaries	9,363	816	8·71
Parochial out-patients - - -	2,475	0	0
Totals - - -	13,151	910	6·92

So that 6·92 will probably represent the per-centage of the sick po population affected with some form of venereal disease, syphilitic non-syphilitic.

Proportion of syphilitic and non-syphilitic cases arranged according to sex.

If we inquire a little further, and distinguish the non-syphilitic fro the syphilitic forms of disease, and separate men, women, and childr into different groups, we may obtain the following results :—

	Total.	Males.	Females.	Childre
Total number of patients reported on -	13,151	4,935	6,647	1,569
Of which there were suffering from				
(*a*) Non-syphilitic forms of venereal disease.	445	357	88	0
(*b*) Syphilitic - - - -	465	247	180	38
Totals - - -	910	604	268	38
Or expressed in per-centages :				
(*a*) Non-syphilitic - - -	3·38	7·23	1·32	0
(*b*) Syphilitic - - -	3·53	5·00	2·71	2·42
Total - - -	6·92	12·23	4·03	2·42

No. 4. *On the Quantity, &c. of Venereal in London Institutions, by Mr. W. W. Wagstaffe.*

is report be considered extensive enough (and it comprises about
's observation of presumably one quarter of the sick poor of
n) to warrant general deductions being made, it may be inferred
long the million and a half of poor population of the metropolis
ceive medical relief for disease at hospitals, dispensaries, work-
and at the hands of the parochial medical officers during the
nearly 7 per cent., or about 1 in 14, are affected with venereal
of some kind. These numbers, it must be remembered, do not
ne midwifery cases.

amount of true syphilis is slightly in excess of the non-infecting
of venereal disease, but the contrary holds good when men are
ered apart from women and children; for among this sex the per-
e of non-syphilitic stands at 7·23 against 5·00 per cent. of
's. By far the larger proportion of venereal disease is to be noted
the males, the returns showing three times as much among them
ong females. The proportion of hereditary syphilis among children
, I am afraid, be satisfactorily deduced from these tables, as no
have been reported in the parochial returns. In order, however,
in some data for a rough estimate of the quantity of hereditary
is among the sick children of the class that would frequent hospitals,
blished statistical returns of the Great Ormond Street Hospital have
examined, and it appears that of 118,590 children treated there
nd out patients during the last ten years, 1,786, or a proportion of
r 1½ per cent., are recorded to have been syphilitic.

No. 5. *On the Inoculability, &c. of Tubercle, by Dr. Sanderson.*

5.—Further Report by Dr. Sanderson on the Inoculability and Development of Tubercle.

my last report I expressed the opinion, in terms as definite as my
vations seemed to justify, that the disease produced by tuberculous
lation might be regarded as an overgrowth in the affected parts of
structural elements which they have in common with the pulp
ined in the alveoli of the lymphatic glands. I had also found that
tructural alterations in which the disease manifested itself were
rkably constant in their character and development—consisting of
Induration and suppuration of the subcutaneous connective tissue at
oint of insertion, attended with the formation of secondary nodules
duration of the same tissue in the immediate neighbourhood. (2.)
rgement, induration, and caseous degeneration of the lymphatic
ls in relation with the seat of primary infection. (3.) Appearance
odules in the lungs, having to the naked eye the translucent aspect
ey tubercle, though differing therefrom in structure. (4.) Enlarge-
of the liver, consequent on interstitial growth of new material
een the lobules. (5.) Hypertrophy of the spleen. (6.) Formation
rious parts of the peritonæal surface of nodules, consisting of ele-
ts anatomically identical with those naturally to be found in the
ted parts.

Summary of conclusions contained in last report.

s regards the conditions of infection, I had concluded from experi-
ts that in rodent animals the tuberculous process may originate not
ely by the inoculation of tubercle, but by any irritation of the requi-
intensity applied to the subcutaneous tissue, and that any external
ry, provided that the animal survives its immediate effects, is capable

of becoming the first link in a chain of pathological changes w
cannot be distinguished from those produced by the insertion of tu
culous material. In correspondence with this inference, I had fo
that in almost every animal inoculated, suppuration had occurred at
point of insertion, a fact which seemed to indicate that, however spe
might be the characters of the subsequent stages of the process,
characteristic phenomenon of common inflammation attended its or
Had abscesses been found at the seat of inoculation in every case, I sh
have been compelled to believe that the formation of pus was esse
But it was not so, for in some of the animals there were no abscesse

The facts from which I had concluded that tuberculosis may origi
traumatically, although very limited in number, were of so positi
nature that I ventured to state that the results of tuberculous inocula
could no longer be regarded as necessarily dependent on any proper
action possessed by the inoculated material in virtue of its having
taken from a tuberculous individual.* The truth of this inference
now been completely established by the experiments of two of the
competent observers, Dr. Wilson Fox, Professor of Clinical Medi
in University College,† and Dr. Cohnheim of Berlin. The follo
paragraph contains a summary of their results, which are the more v
able as they were arrived at altogether independently and wit
knowledge either of each other's inquiries or of mine.

Observations of Dr. Wilson Fox and Dr. Cohnheim as to the conditions of tuberculous infection.

From the tabular summary of Dr. Fox's experiments (117 in num
it appears that of 70 animals inoculated with various products de
from bodies of non-tuberculous patients, about half (34) became tu
culous. In addition, five animals were inoculated with putrid
originally healthy muscle, and four of them became in like ma
tuberculous, as was found when they were killed at various periods
84 to 122 days after inoculation. Of seven animals in which seto
other mechanical irritants were introduced under the skin, two bec
tuberculous.‡ This research, no less remarkable for the accuracy
completeness of the anatomical details than for the conclusiveness o
experiments, was followed only the other day by another in Be
which although of similar nature appears by internal evidence to
been conducted in entire ignorance that several of the question
vestigated had already been completely settled in England.
Cohnheim and Fränkel, for the purpose of obtaining an answer to
question, "Does artificial tubercle owe its origin to a specific virus
introduced into the peritonæal cavities of guinea pigs portions of va
tumours (carcinoma, sarcoma, condyloma, &c.), as well as of healthy

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* With reference to the traumatic origin of tuberculosis in the guinea-pig, an
possibility claims consideration, namely, that of the influence of the air and o
organisms which it contains. It has not yet been proved that injuries, which
such a nature that air is completely excluded from contact with the injured par
capable of originating a tuberculous process. The following experimental results
indeed, to suggest that they may not be so. Setons steeped in carbolic acid were in
in 10 guinea-pigs on the 24th of September 1868, each animal receiving two. A
same time extensive fractures of both scapulæ were produced in five others, care
taken not to injure the integument. No tuberculosis or other disease of internal o
has resulted in either case.

† "On the Artificial Production of Tubercle in the Lower Animals."—Lon
McMillan & Co., 1868.

‡ It is of importance to note that all these experiments were completed befo
appearance of my last report.

§ Cohnheim and Fränkel. Untersuchungen über die Ueberträgbarkei
Tuberculose auf Thiere. Virch. Archiv. Bd. xlv. 1868, p. 216.

decomposed tissue. Subsequently they employed in the same way
ty of insoluble inert substances, such as blotting paper, charpie,
ercha, caoutchouc, vulcanite, &c. In those animals that survived
mediate effects of the injury, emaciation supervened sooner or later,
e animals eventually died with tuberculosis of the peritonæum,
pleen, lungs, and other organs, the morbid appearances correspond-
every respect with those described in my last report.

regards the bearing of these facts on the general question of the
and origin of tuberculosis, I concluded from my own observations
ere is no structural distinction between the artificial disease and
tubercle, so long as the term is confined, as all accurate writers
w accustomed to confine it, to miliary tuberculosis; but I con-
d it necessary to maintain a reserve as to its relation with the many
ogical processes which are spoken of as tuberculosis in the common
ge of practical medicine and surgery. In going so far the two
guished pathologists already quoted have fully agreed with me.
Fox says: "I must confess that sceptical as everyone must
urally at first feel on this subject, the cumulative force of the
lence in favour of the tubercular nature of these growths appears
ne irresistible. We are either dealing with tubercle, or we have
ore us a new and hitherto unknown constitutional disease of the
entia, consisting of growths which, in their naked eye appearances
l histological characters, correspond with all the essential features
ubercle in man; which occur not only in the organs which are the
osen seats of tubercle in man, but also in the same parts of those
gans; which have the same vital characters, and the same early degene-
ive cheesy changes, not suppuration nor acute softening, and with
marked characters sufficient to distinguish them from tubercle."*
heim says, "All the marks by which tubercle is characterized, as
ch, are present; the agreement of the product of inoculation with
man miliary tubercle could not be more complete than it is, whether
gard be had to its extended distribution, and to the great variety of
gans affected, (peritonæum, pleura, lungs, liver, spleen, lymphatic
nds, and even the choroid,) or to its macroscopical and micro-
opical characters."

the work done during the past year my first object has been to
lify and elaborate the pathological results comprehended in my former
rt, to confirm what was left imperfectly established, to elucidate
t was obscure, and to endeavour to bring the inquiry into more direct
ing on the most important of all etiological questions, that of the
in and development of tuberculosis in man.

Perfect identity of artificial tuberculosis with miliary tuberculosis in man.

has been already said that in the liver, lungs, and some other organs,
material which constitutes the new growth presents uniform struc-
l characters which, although they are met with in many other parts
he body, are most distinct in the alveolar pulp of lymphatic glands.
imply this resemblance I proposed to designate these characters by
word *adenoid*. My further inquiries lead me to believe, in the first
e, that these characters belong much more generally to tuberculous
wths than I had at first supposed; and secondly, that those normal
ues which possess them are much more liable to become the seat of
tuberculous process than others. To illustrate these points it will be
essary not only to refer to my own observations, but to render avail-
e all the discoveries which have been made during the last six or
en years which bear upon the question.

Structural characters of tubercle.

* Fox, loc. cit. p. 20. Cohnheim, l. c. p. 219.

The existence of the tissue in question has been for some ye recognized by all minute anatomists. Kölliker first described it un the term "*cytogene Bindesubstanz.*" For the more complete elucidat of its structure and significance, science is indebted to Professor His Basle, who first applied to it the term "*adenoide Substanz.*"* Ot histologists speak of it as *netzförmige* or *reticuläre Bindesubsta Zellengerüst*, &c. Kölliker defines the tissue generally as "a reticul "of stiff, pale fibres, comprising lymph corpuscles in its mesh "originating by the combination of branched cells, consisting neither "gelatigenous nor of elastic substance, but of an albuminous compou "soluble in caustic alkali, but not in boiling water."

Reticular cytogenic tissue is to be found in the lymphatic glands, in t spleen, in the neighbourhood of the ducts of the liver and of the bron in the serous and mucous membranes, and in the medulla of bone. proceed to refer to its character and distribution in most of th organs.

Structure of the adenoid pulp of the lymphatic glands.

The structure of the lymphatic glands has been understood by an tomists only for a short period.† A few years ago it was supposed tha lymph-gland consisted essentially in a network of finely-divided lympha vessels, compacted into a dense mass by cellular tissue, and abundan supplied with blood vessels. It was imagined that the afferent lymp tics divided into minute branches which, after forming an intric plexus in its interior, combined again to become the efferent vess Somewhat more recently it was recognized that the afferent lympha channels were not continuous with the efferent as such, but that th lost themselves in certain holes filled with cells, since called alveoli, fr which the efferent vessels took their origin. The first step toward more exact knowledge of the subject was taken in 1852–53, wh Brücke ‡ and Donders § showed that these holes were not mere dila tions of lymphatics, but that they contained structures of considera complication; that in addition to the lymph corpuscles, which were bef thought to be the sole occupants of the alveoli, each alveolar cavity permeated by a network of transparent fibres. They further show that this network is so arranged as to form a flask-shaped body (sin called by His an ampulla), the contour of which corresponds to that the cavity (alveolus) which it occupies, being, as it were, suspended in by delicate strings of transparent connective material which stretch acr the space between its outer surface and the inner surface of the alveol Thus the structure of the medullary substance of a lymphatic gland the part in which the alveoli are) may be described as follows: It consists of a number of flask-shaped cavities, communicati with each other by their necks, enclosed in a meshwork consisting beams and septa, all of which spring from the general capsular inve ment of the gland, and tend towards the hilus. These have for th

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* Kölliker, Handbuch der Gewebelehre des Menschen, pp. 58 and 64. Prof. His, Beitrage zur Kenntn. der zum Lymphsystem gehörigen Drüsen, p. 65.

† If it were necessary to seek for a reason for introducing these details into t Report, I should find it in the fact that even in the later editions of English text bo of physiology the structure of the lymphatic glands is still described as it was kno to anatomists of 20 years ago.

‡ Brücke, Sitzungsberichte der Akad. der Wissenschaften zu Wien. March 18 p. 429.

§ Donders, Physiol. des Menschen, Band I. (Theile's translation), p. 318.

sive function to support and enclose the more important and more te structures which are contained in the alveoli, as well as the n vessels and blood vessels which belong to them. Thus the alveoli with the tubular channels of communication between them form many-chambered cavity, which cavity is occupied by a structure of me contour as itself, attached to it, as I have said, by innumerable ds or bands of extreme tenuity. This compound body might be ared to a bunch of grapes in which each little stalk joins some , instead of all combining to form one principal stalk ; the stalks ch receive the name of medullary cylinders), being attached to the unicating channels in the same way as the ampullæ are to the voli.*

ich being the general arrangement of the alveoli and their contents, mains to advert to their relations to the lymph stream, and the ation of lymph corpuscles, a subject which has a close relation to pathological process it is our present object to study. The ampullæ ell as the medullary cylinders consist of a network of extreme acy, the interspaces of which are entirely occupied by lymph cor- les. The ampulla is not covered by any membranous investment, only difference between the surface and the enclosed pulp being that ne outside the meshes are much smaller, and the minute fibres are h more closely felted together than they are towards the centre. is there any distinction, as regards the structure of the fibres them- es, between those which form the fine meshwork of the ampullæ those which form the fibres by which they are suspended to the rnal surface of the alveolus, excepting that the latter are somewhat oser.

'rom the examination of glands naturally or artificially injected it been ascertained that the afferent lymphatic vessels, after they etrate the capsule of the organ, spread over the surface of the

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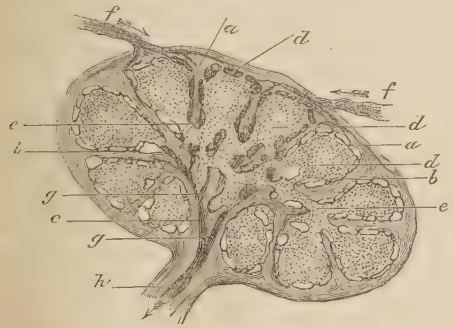
In illustration of the description in the text, the following diagrammatic section of lymphatic gland, copied from Frey, may be of service :—



capsule ; *b*, dissepiments between the *alveoli*, all of which are continuous with the capsule and converge at *c* towards the *hilus*: *d*, *ampullæ* ; each *ampulla* occupies an *alveolus*, to the surface of which it is attached by bands or threads, which cross the lymphatic sinuses ; *e*, medullary cylinders ; *f*, afferent lymphatic vessels ; *g*, efferent lymphatics, uniting at the hilus into one trunk, *h*.

adjacent medullary substance, finding their way immediately to the spaces surrounding the ampullæ and their connecting cylinders. How the lymph sinuses open into the numerous and minute lymphatic branches which combine to form the efferent trunks is not even now accurately determined. The fine network of the ampullæ is richly supplied with vessels, the arrangement of which in relation to that structure may be seen in Plate IV., Figs. 2 and 3 (see explanation). The arteries from which these capillaries derive their supply enter the reticular tissue by penetrating the medullary cylinders, and continue their course along the axes of these cylinders towards the ampulla, each being usually accompanied by a vein.

From the preceding short sketch of the anatomy of the lymphatic glands, which I have verified in its leading particulars in the lymphatic glands of guinea pigs, it appears that in their relation to the adenoid tissue which constitutes the ampullæ and cylinders, there is a complete antagonism between the lymphatic and blood circulation. Whereas the blood capillaries are richly distributed throughout the adenoid tissue, the lymph stream is separated from it by the densely felted fibres within which that adenoid tissue is comprised.

Adenoid pulp of Peyer's follicles and of the *Trachom-drüsen.*

It is now well known that Peyer's follicles have a structure which, although simpler, altogether resembles that of the ampullæ of the lymphatic glands. A Peyer's follicle is a mass of adenoid pulp of which the projecting part is covered by epithelium, while the convex under surface is surrounded by a lymph cavity, which can be injected from the lymphatic system, corresponding in every respect to the alveolar sinus of a lymph gland, the only difference being that whereas no epithelium can be detected in the latter, it has been distinctly made out in the former. Along the intermediate zone (so-called equator) the adenoid pulp of the follicle is continuous with the similar tissue of the sub-mucous layer. Peyer's follicles, like those of the lymph glands, are abundantly supplied with capillary blood vessels which have the same arrangement precisely as in the ampullæ.

Similar adenoid follicles are met with in other parts of the body. Thus in the conjunctiva there are globular masses of vascular cytogenic pulp (*Trachom-drüsen*), each of which is partly surrounded by a lymph sinus, just in the same way as the ampullæ of the lymphatic glands. In the adenoid follicles of the tonsils and in the follicles at the root of the tongue, which in every other respect closely resemble the others, this relation has not as yet been made out.*

Adenoid pulp of the spleen.

In the spleen we have an organ in which adenoid tissue exists in larger proportion than even in the lymphatic glands. Its relation, however, to the blood vessels is entirely different. It can be readily made out in the guinea-pig that, although the largest arteries are surrounded by common connective tissue, the rest are provided with sheaths of adenoid tissue which closely resemble the medullary cylinders of the lymphatic glands, and that the malpighian corpuscles are formed by the outgrowth of these cylinders into the form of spheroidal tubera, which either surround them or project from them laterally. As is well known, the arteries very rapidly divide, first into small arterioles and then into minute capillaries, some of which go to the malpighian corpuscles, others to the so-called pulp. Of this pulp all that can be said is that it is an exceedingly fine adenoid reticulum, which fills the whole of

* Bruch, Zeitsch. f. w. Zool. B. iv. p. 297, 1854.

re not occupied either by the malpighian corpuscles, or by ous channels which permeate the spleen in all directions. comes of the arterial capillaries in this tissue has been until open question, for it has long been recognized that they do not cate directly with the veins. The recent investigations of m to show in the most conclusive manner that they actually lose es in the adenoid reticulum through which the blood filters into merable venous channels which pass in all directions through . It is interesting as well as important to notice that in the ist as in the lymphatic glands, the three tissues of which it is ed are not separated from each other by any membrane. The rangement of the organ depends on the form of the reticulum, everywhere of the same nature, differing only in the degree of of the fibres and the size and form of the meshes, so that the m of the malpighian corpuscles, of the arterial sheaths and of , constitute but one framework continuous throughout.

l the instances hitherto referred to the adenoid tissue forms gans, the functions of which depend on the reaction of the tissue the blood or lymph which circulates through it. But there are rts of the body in which the same structure is to be found, not ted into masses of definite contour, but scattered in layers which most part lie underneath or form part of the skin and mucous us membranes. It is necessary to study these adenoid expan- ith reference to the reaction upon them of the tuberculous in- The field of research is so large that the view I am able to give must be necessarily incomplete.

Distribution of adenoid pulp in the mucous and serous membranes.

y last report I described certain bodies as existing in relation arteries of the omentum of animals infected with tubercle, in the nodules, varying indefinitely in size, the largest being compa- hempseeds. From the more minute and careful examination of hich I have since made, I have learnt that these visible granu- are strictly speaking not new growths but overgrowths, and that iginate by the enlargement of previously existing organs, not by elopment of any heterogeneous structure. These organs have tle noticed by anatomists. The only reference which I find to s in the last edition of Prof. Kölliker's "*Handbuch*" (p. 603), e describes certain globular prominences consisting of cells re- g lymph corpuscles along with proliferating epithelium cells, as to be found on the surface of the human peritonæum, and par- y of the *omentum majus*. Further, Dr. Knauff of Heidelberg, in y recent papers,* describes certain organs under the designation nphatic nodules," as constantly to be found in many parts of the membranes, and clearly recognizes the close relation between nd miliary tubercle. To these researches I shall have further n to refer, and content myself for the present with remarking y own observations were complete before I became acquainted em. It is probable that organs of the same kind exist not only in ura and peritonæum but also in synovial membranes, and they close relation with the villous structures which border the arti- artilages.

Peritonæal adenoid tissue.

he peritonæum of the guinea pig I have studied these bodies,

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nuff, Zur Histologie des Miliartuberkels auf serösen Häuten (vorläufige ung). Centralblatt, Aug. 17, 1867. Knauff, Ueber das Pigment der Respira- gane. Virch. Arch. vol. xxxix. p. 443.

2528.

chiefly in those parts of the membrane which are the constant seat of tuberculous disease, viz., in the omentum and in the double fold of membrane which encloses the pancreas, and extends from that gland to the greater curvature of the stomach and the duodenum in its long course from the pylorus to the orifice of the pancreatic duct. These layers are continuous in front with those which in this animal go to form the omentum, a structure which differs widely from the omentum majus of human anatomy, both in its position and relations. Instead of stretching as a veil over the mass of intestines, it occupies a concealed position along the greater curvature of the stomach, to the convex surface of which it not unfrequently adheres. In order to examine these structures satisfactorily, the best method is to open the abdominal cavity from the front and fill it with serum or some other indifferent liquid. By this means the omentum, which is of extreme delicacy, can be made to float, and thus dissected out without risk of injury. My invariable plan is to sever the peritonæal attachments of the spleen and pancreas on all sides under liquid, and then to remove the two organs together, and spread the membranes on a large plate of glass for examination under the dissecting microscope.

The omentum consists in its most transparent parts of two layers of epithelium, enclosing a regular network of connective fibres, the meshes of which are remarkably uniform in size, measuring about $\frac{1}{100}$ of an inch. The epithelium is formed of cells with wavy outlines, each containing a spheroidal and finely granular nucleus. These cells cling closely to the fibres of the network, never extending over the empty spaces between them, in consequence of which the nuclei project visibly from the surface. The relation of the arteries and veins to the two essential elements of the structure, viz., the epithelium and the network of structureless transparent fibres, differs according to their size. The smallest vessels, whether venous or arterial, are in immediate contact with the epithelium (see Fig. 2, Plate VI.). The vascular wall is connected on either side with the fibres of the network, with the substance of which it appears to be intimately blended. The larger vessels are enclosed in sheaths, of which, although they vary considerably in their structure according as they are studied in the omentum or in the mesentery, two principal varieties may be distinguished, those which contain fat cells, and those which consist entirely of adenoid tissue. Of the first kind a complete idea may be gained from Plate II. Fig. 1, which represents a vascular anastomosis from the mesentery. Each artery with its accompanying vein is enclosed in a flattened cylinder, of which that part which is next the vessels consists of fat cells, whereas the external part is of transparent adenoid tissue which could not be distinguished from that of a lymph gland. Vessels of a size intermediate between those last described and capillaries lie in a mass of adenoid pulp, which sometimes forms a tubular sheath of uniform diameter, sometimes projects from the serous surface in the form of fringed appendages, extending along the course of the vessel, or spreading out between the epithelial layers.

From the masses of adenoid pulp which surround or fringe the vessels, to the adenoid nodules previously referred to, the transition is easy. These bodies are in fact collections of the very same material. They occur in the peritonæum in a variety of forms, of which the following are examples:—

Form *a*. Mere aggregations of cells, between the opposed layers of epithelium, not supplied with vessels. These occur very frequently in the omentum, in some parts of which they exist in great numbers.

them is shown in Plate II., Fig. 3. The lymph corpuscles are be embedded in the substance of the same transparent material of which the fibres of the omental network are composed, which come blended together into a hyaloid capsule of an oval form for ception. These non-vascular nodules are usually much larger e one represented, which was selected in order that the whole of t be comprised within the field of the microscope.

b. Collections of cells around loops of intermediary vessels. these is shown in Plate I., Fig. 4. An arteriole after leaving a trunk runs a short course between two opposed layers of ium, towards a mass of adenoid pulp. From this mass a vein than the artery returns by the same course.

c. An arteriole (Plate I., Fig. 1 *a*.) terminates in a labyrinth of ies not at all unlike a renal malpighian tuft, out of which the nerges, and after joining another vein from a similar tuft soon s way to a venous trunk. Other forms might be referred to, but l them are modifications of those already described. In intimate re the vascular sheaths and isolated masses are alike. All are ons of lymphoid corpuscles embedded in an extremely delicate m and covered with epithelium.

epithelium covering the adenoid masses is continuous with the l epithelial lining of the peritonæal cavity, but differs from it dly. Plate VI., Fig. 2, illustrates the fact that wherever a capillary or vein occupies the space between the two layers of epithelium, thelial elements not only become more or less oblong, but arrange lves in a direction parallel with that of the axis of the vessel. larger vessels lie immediately underneath the surface the same ement is observed. Fig. 4 on Plate II. shows the epithelium g an artery and vein, which are bordered on either side by an d, fringe. Over the whole of the fringe the epithelium can be , but it is seen that the form and size of the elements are different; of being large oblong plates with sinuous margins, they look like scales. This appearance corresponds evidently to the proliferated lium of Kölliker. It is to be found without exception over every f adenoid tissue when examined by v. Recklinghausen's method; preparations stained with carmine it cannot be recognized, the of the epithelial elements when coloured by that reagent looking y like lymph corpuscles.

relation of the adenoid tissue to the vessels has been investigated o methods. In some of the experiments, I injected a solution of ne containing one drachm in two ounces of water, about two hours killing the animal, into the peritonæal cavity, in the manner ed by Prof. Chrzonszczewsky of Kasan. The effect of this pro- remarkable; all the masses of adenoid pulp are coloured, so n those parts of the peritonæum in which they are numerous the e looks as if it were scattered with red dots. Under the scope it is seen not only that the lymph corpuscles are stained, but the veins leading from them are filled with carmine. These rances at first suggested that the distended channels were in truth ins but lymphatics, but on tracing them to their destination I soon ed myself of their real nature. By this method I also learnt that ver the adenoid pulp is in relation with blood vessels, it is itself supplied with blood. These capillaries are so large that when issue is examined in glycerine they often seem to constitute the mass, completely concealing the cells. Whether they communi- r not directly with the arteries, or like the venous channels of the

spleen receive their blood from inter-corpuscular spaces, seems to m be a question yet to be determined. With reference to it, it is to be no that the capillaries demonstrated by this method can always be tr into efferent venous trunks, but cannot, so far as I am able to obs be shown to be continuous with arterioles, and that the efferent ve are always either larger or more numerous than the afferent. In add another fact is to be borne in mind, which although mainly patholog may not be exclusively so, viz., that the veins leading from ade masses are, when the latter are excited by the tuberculous infec often filled with colourless corpuscles (see Plates I. Fig. 3, and V Fig. 4). So far as relates to the vascularity of adenoid tissue in diseased state, my injections of the diseased parts from the cœliac show that the tissue is richly supplied with arterial capillaries, arrangement of which cannot fail to remind one of the manner in w the arterial capillaries of the spleen are distributed to the sheat adenoid pulp. As regards the relation of the adenoid masses in peritonæum to the lymphatic vessels, I confess myself to be ent at fault. In applying v. Recklinghausen's method, I have faile discover any lymphatic channels, nor am I aware that anyone else met with them in this part of the peritonæum.

Physiological signification of the adenoid tissue of the peritonæum.

The above details render it possible to enter on the considerati the physiological significance of these masses. From their struc analogy to the splenic pulp, it is scarcely possible not to suppose they have similar functions, *i. e.*, that they are concerned in the elab tion of blood corpuscles, while, on the other hand, their resemblan the adenoid structures of the mucous membranes suggests that the probably concerned in absorption, and that they stand in the relation to the peritonæal cavity that Peyer's follicles and the re the adenoid tissues of the intestine do to the alimentary canal. latter view seems probable, from the similarity of the conditions u which they show signs of excited action with those which affect, corresponding manner, the lymphatic glands and the intestinal folli In animals that have died of acute peritonitis all these ade masses become soft, tumid, and enlarged.* If the smallest pos amount of tuberculous material, suspended in water, is injected into peritonæum, these organs undergo a more gradual hyperplasia, and e tually become tuberculous. This delicacy of reaction against an infec agent seems to me to be more easily understood by supposing that morbid material actually passes through the excited tissue than in other way.† In suggesting that the peritonæal adenoid masses, as as adenoid tissues everywhere, play an important part in the deve ment of the blood corpuscles, I am partly influenced by the observa already referred to, namely, that under certain circumstances not f determined, colourless blood corpuscles are contained in extraordi numbers in the veins leading from them, and partly by my inabilit think of any other final cause for their existence. I have been fur

* In confirmation of this statement, see an observation published by Prof Klebs since the above was in print, who has observed the same fact, but attribu to emigration from the capillaries of colourless blood corpuscles! Klebs, Hand der pathologischen Anatomie, 1869, p. 318.

† In confirmation of this conclusion I would refer to the following experim result (March 31st). In three guinea pigs inoculated 21 days previously, by injection of a drop of distilled water rendered turbid with pounded diseased lymph gland, no lesion was found excepting that the adenoid masses (Knauff's bodies) in anterior mediastinum were enlarged to such an extent that when the membrane spread out on a glass plate, they could be readily distinguished without the aid lens, as transparent beads.

rongly confirmed in my surmise since I have become acquainted
ie recent most important researches of Neumann as to the deve-
t of blood corpuscles in the cytogenic tissue of the medulla of
nd the still more satisfactory observations of Bizzozero on the
bject.*

ie alimentary canal adenoid reticular tissue is very generally
ted underneath the mucous surface, and wherever it occurs it
portant relations with infective morbid processes. In addition to
licular glands analogous to those of Peyer, which have been
referred to,† there are masses or layers of the same material in
ous membrane of the fauces and pharynx as well as in that of
ll intestine. In the latter situation, indeed, adenoid pulp con-
the great bulk of the mucous tissue, forming a continuous
the deep surface of which is separated from the muscular fibres
connective tissue and vessels, its upper limit being the so-called
nt membrane of the epithelium, with reference to which it is
own that it is not in any true sense a membrane, but is merely
superficial condensation of the delicate reticulum which per-
ie whole mass. Everywhere throughout the small intestine the
pulp is in relation with the submucous network of lymphatic
s, which over the whole of the villous portion of the small
e are of great width and exceedingly numerous.‡

mucous membranes which line the respiratory cavities, and par-
the pulmonary air tubes, possess no adenoid tissue resembling
the alimentary canal. In the guinea pig, as in other mammalian
, longitudinal elastic fibres and transverse muscular fibres lie
rately underneath the epithelium of the bronchial tubes, outside
h comes a layer of common connective tissue, in which more
mperfect cartilaginous rings are enclosed. Anatomists have not
d any glandular structures excepting the acinous mucous
which occur here and there beneath the mucous membrane of
er bronchi.

Distribution of natural adenoid pulp in the healthy lung.

y former report I stated that in the irongrey nodules which
om tuberculous inoculation two kinds of cells are met with,
large nucleated cells which I identified with those naturally
d in the alveoli, and smaller bodies not much larger than blood
es, which I regarded as the essential elements of the morbid
. Following out the line of inquiry which my observations as to
lopment of tubercle in the peritonæum had suggested, I devoted
tention to the examination of the healthy lung in the guinea pig,
purpose of ascertaining whether or not masses of adenoid pulp
e found in it, particularly in those parts which appear to be the
e starting points of tubercle.§ From the examination of a number
nens, I have ascertained that masses of cytogenic tissue of irre-
rm are always to be found in the neighbourhood of the bronchi.
hich are in relation with the smaller branches lie in the loose

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nann, Bedeutung des Knochenmarkes für die Blutbildung (vorl. Mittheil-
ntralblatt, Oct. 10, 1868. Bizzozero, Sulla funzione ematopoietica del
elle Ossa. Gaz. Med. Ital. Lombard. 1868, No. 46.

Huxley on the Tonsillar Follicles, Microscopical Journal, vol. ii. p. 74. See
Luschka. Das adenoide Gewebe des menschlichen Schlundkopfs, Schultzes
B. iv. 1–9.

a complete and exhaustive account both of the tissue itself and of its vessels,
, "Ueber die Chylusgefässe der Dünndarm-schleimhaut, und über die
hnen der Peyer'schen Drüsen," Zeitschrift für w. Zoologie, B. xiii. S. 1–28.
only structures containing adenoid tissue which have been referred to by
s as existing in the lung are the so-called *glandulæ pulmonales* (lymphatic
the neighbourhood of the larger bronchi).

common connective tissue by which these tubes as well as the blood vessels are separated from the air cells, while those which lie near bronchi of sufficient size to be possessed of cartilages, are found to lie in a corresponding position outside of the fibrous layer in which the cartilages are embedded. In every instance I have found the adenoid masses occupying a position between the air tube and the nearest artery, with the outside of the adventitia of which the surface of the mass is usually, if not always, found in contact. It was never, however, observed that the arterial adventitia was in the slightest degree modified, so that the mass could not be regarded as a development from that structure. It is further to be noticed that in injected lungs the masses were found to be vascular, minute capillaries not only ramifying on their surface, but penetrating into their interior. I am unable to state anything from my own observations as to the relation of these bodies to the lymphatic system ; but inasmuch as they lie in the course of the absorbent vessels (see p. 116), I have no doubt that they are in direct relation with the lymph stream. (See Plate V., Figs. 2 and 3, and Plate VIII., Fig. 3. From their position relatively to the bronchi and arteries, it became evident to me that these normal masses of adenoid pulp correspond anatomically to the much larger abnormal collections of similar material which in my last report I described as peri-bronchial granulations.

In the liver, strata of adenoid pulp are also to be found in the healthy condition of the organ, the distribution of which is analogous to that which I have described above. The tissue stands in the same relation to the branches of the portal vein and the bile ducts that it does to the pulmonary arteries and bronchi. I have not, however, as yet met with definite masses like those which are to be seen in the lungs, nor am I able to state how far the tissue can be traced along the ramifications of the portal ducts. It cannot, I believe, be demonstrated in the intra-lobular spaces.

Additional Observations as to Tuberculosis of the Lymphatic Glands.

I have now to bring the anatomical facts stated in the preceding paragraphs into relation with the morbid processes which constitute tuberculosis. In doing so, it is clearly most advantageous to consider those which have their seat in the lymphatic glands and in the spleen, not merely because I gave only a general and preliminary account of them in my last report, but because the reaction of the tuberculous infection on the *normal* adenoid tissue of which these organs so largely consist, is the type and pattern of the changes to which the similar *adventitious* tissue is subject elsewhere.

The diseased conditions of the lymphatic glands (excepting so far as their rough pathological anatomy is of practical interest to the surgeon) have been very little studied, so that in beginning the investigation of any of them one is breaking new ground. The reason why so little is known of the subject is obvious ; until lately their normal structure was not understood even in its broad outlines.

My dissections have all been made by the process first, I believe, employed by Billroth, about ten years ago, and subsequently so successfully and so extensively applied by His, to the investigation not only of the structure of the spleen and lymphatic glands, but of many other organs—the method of pencilling out thin sections of the hardened tissue with a sable brush held vertically. Fresh sections of the spleen or lymphatic glands, whether prepared with the double-bladed knife or otherwise, show absolutely nothing of the structure. All that can be seen is a confused mass of cells. Sections of the same organs, after hardening

ic acid or alcohol, are much more instructive, but still the
s embarrassed by the innumerable multitude of cells, which seem
packed that there can be no room for any other elements.
lling such a section in the manner above referred to, a vast
f these bodies are removed, whereas, if proper care is taken,
ulum in the meshes of which they are contained remains un-
The application of this method in the investigation of the
ne glands is specially valuable, for it affords a ready means of
ating the two principal textures which enter into its composi-
medullary and the cortical—and of bringing into view the
with their surrounding lymph-sinuses.

mphatic glands are subject to two distinct morbid alterations
culized animals, both of which were referred to in my former
affecting subcutaneous and internal glands respectively. The
eous glands are affected only secondarily, that is, in consequence
changes going on at the seat of injury, consequently none of
come diseased excepting those that receive tributaries from
parts. The morbid changes produced are more or less acute
to softening and suppuration. The alteration consists in
s and rapid enlargement of the organ, consequent on multipli-
cells. The alteration appears to affect all the parts of the
ke, but does not in its early stages alter its structure. It
said to consist primarily mainly in congestion, and in the
ation of cells in such enormous numbers as to destroy the con-
of the gland. Minute collections of free cells (purulent foci)
disseminated throughout its substance, by the confluence of
ne whole is converted into an abscess. In the meantime the
f the organ becomes thickened by the interstitial development of
nective tissue, within which may usually be found a layer of
stance, which instead of softening has undergone the gradual
f induration to be immediately described.

internal lymphatic glands the origin of the morbid alteration
tertiary—that is to say, it is a consequence of secondary
xisting in the organs from which they receive their afferents.
erations are chronic in their character, and are never attended
uration. I have studied them principally in those glands which
he lymphatics of the liver, and are situated in the *ligamentum duodenale*, close to the portal vessels. The changes observed
following nature. In the early stages nothing is seen excepting
alveolar reticulum is perhaps somewhat coarser than it should
ate IV., Figs. 1 and 2.) All the constituent parts of the organ
adily distinguished from each other, and the lymphatic sinuses
e pervious and in a natural state. The further progress of
ation is marked by the diminished distinctness of the structure.
es more and more difficult to distinguish the alveoli from the
r tissue by which they are separated from each other. This
o arise from two distinct processes. In the first place, cells are
d in great numbers in the fibrous tissue which constitutes the
capsule of the organ as well as the septa or partitions which
the alveoli from each other. These cells differ from the or-
mph corpuscles in their larger size, and in the fact that most
are distinctly nucleated. They are arranged in round or oblong
nclosed in the meshes of the fibrous tissue, or more properly
, in cavities which they have made for themselves. In this
trabecular tissue loses its natural compactness, and assumes the
of a spongy reticulum, the interstices of which, however, are

much larger than in that of the alveoli. In the ampullæ a char occurs which at first sight appears to be of an opposite nature. T slender fibres of the alveolar reticulum become coarser. Towards centre of the ampullæ this thickening seems to affect all the fib equally, so that a fine network of threads is converted into an equa fine network of transparent cords, the holes of which, notwithstandi the general enlargement of the whole mass, are much smaller than th were before. Towards the surface of the ampullæ the process cons in the formation of irregular bands of fibrous material traversing original tissue at various distances and in various directions, by wh the lymph spaces are obliterated and the whole converted into a coa sponge, and thereby assimilated to the altered cortical tissue with wh it is continuous. All this might be expressed more shortly but less co pletely by saying that the whole of the medullary part of the gla becomes the seat of fibrous degeneration, which, while it princip affects the dissepiments, extends from them to the alveoli, convert all the affected parts into a fibrous sponge in the interstices of which contained cells usually larger and more distinctly nucleated than lym corpuscles.

Up to this point the altered gland tissue is still supplied with blo for in specimens of which the arteries are injected it may be seen to pervaded with vessels in all directions. The vascularity, however, i believe confined to the trabecular tissue, for the fibrous degeneration the fine tissue of the ampullæ necessarily involves the obliteration its equally delicate capillaries, or rather their conversion into fib bands indistinguishable from the rest of the tissue. The part which corpuscles take in this process of fibrous transformation must, I ven to think, be exceedingly subordinate. In the ampullæ the natu lymph cells totally disappear, so that in those parts of the gland which the fibrous change is most complete there are no cells whate as one may easily satisfy oneself by the examination of unpencil sections. In those parts where there are still heaps of cells contained the meshes of the sponge, these appear to have nothing to do w the development of the fibres which surround them. The ultim result of the process is caseation, *i.e.*, slow necrosis. The fate o cells is to die, of the fibres to become opaque and granular. W this happens scarcely needs explaining. For even if we refuse to adm that an adventitious tissue is in itself less alive than the tissue wh it replaces, the mechanical effect of such a transformation as i been described must be to produce anæmia and consequently slow dea As to the chemical nature of the material deposited I have little say. It is very translucent, never striated or granulous, and is ve readily stained by solution of carmine.

The relation of the morbid process to the functions of the organ scarcely be doubted. From the moment that the intra-alveolar netw becomes transformed into ordinary fibrous tissue, all activity must be an end; as the degeneration progresses the lymph stream must be entir stopped, and all the tributaries leading to the gland obstructed. T in every case in which a diseased organ induces fibroid degeneration its lymphatic glands, those glands must react on the organ itself obstructing its lymphatic capillaries.

The changes which occur in the spleen correspond so closely w those observed in the lymphatics, that they scarcely need a separa description. The development of the disease is divisible into two sta It begins, as in the lymph glands, by a rapid cellular proliferation, consequence of which the organ increases enormously in size. T

ation of cells occurs, as I stated last year, principally in the n corpuscles, in consequence of which these bodies become lly prominent and obvious, and assume in every respect the t and appearance of miliary tubercles. By the overcrowding of l the blood vessels are compressed, so that the central parts e mæmic and undergo caseous degeneration. Eventually the ndergoes a fibroid degeneration, the characters and results of e similar in every particular to those already described in the e glands. The pulp and the malpighian corpuscles, which in the g are remarkably well developed, especially underneath the urface, and form by far the greater part of the bulk of the organ, ome indistinguishable. This blending of dissimilar types of takes place just as in the lymphatic glands. On the one hand ule is everywhere thickened, and here and there bulges out into rominences in consequence of the irregular growth of groups n the interstices between its fibres, while on the other the bands formed fibrous material spread in every direction through the he final result of the transformation resembles that which I have lescribed so closely, that if it were not for the more regular ent of the trabeculæ it would be impossible to discriminate sections of the two organs (see Plate VII., Figs. 5 and 6).

Additional Observations as to Tuberculosis of the Skin.

the primary local effects of inoculating tubercle or of introducing itants into the living tissues of the guinea pig so as to induce osis, results of great importance have been recorded by other s,* and particularly by Dr. Fox, since the date of the last report. 'ox's experiments the foreign matter was inserted under the skin. ts that the most common local result is the formation of masses matter which are dry and friable, ("débris of fattily degenerated ,") and are enclosed in capsules of firm semi-transparent and lardaceous appearance. But in addition to these encapsuled of caseous matter, he states "there are small granulations g in size from that of a poppy seed to that of a hemp seed, are irregularly scattered for a variable area in the subcutaneous ." With respect to these masses, which are sometimes semi- ent throughout, and sometimes have opaque centres, he remarks hey present a striking resemblance to the naked eye, and also the microscope, to the changed lymphatic glands." The account of their minute structure may be summarized as follows:— denser and more central parts they consist of nuclei embedded omogeneous tissue, in their less dense parts "a fibrillated tissue forms bands or trabeculæ between which the cells lie," the rming a structure which has "the strongest resemblance to the ntary composition of a lymphatic gland, or to the cytogenic of His." "Throughout the granulations many of the cells lso of the nuclei are seen in various stages of fatty degeneration. at is sometimes in visible drops, sometimes in a finely molecular The change is most common towards the centre of the granu- s, but it is also seen in cells irregularly scattered through the ent tissue."

ese subcutaneous granulations but little notice has been taken

* Klebs, Ueber die Entstehung der Tuberculose u. ihre Verbreitung im Körper. , B. xliv. S. 242. Langhans has introduced the infective material beneath the iva of the eye, Klebs and Cohnheim into the peritonæal cavity. I have been obtain a copy of Langhans' researches which are contained in an inaugural on.

by other observers.* Their importance was overlooked in the accou given of the local changes in my last year's report. Investigatio which I have made with special reference to this subject enable me confirm in every particular the accuracy of Dr. Fox's details. animals that have been inoculated from three to four weeks wi material taken immediately after death from the bronchial glands other tuberculized animals, the only morbid alteration which can discovered consists in the existence of a knot of hardened and thicken skin. On making a section of the diseased part, and examining it w a lens, it is seen that the hard mass lies immediately under the tr skin, of which in fact it seems to form a part; and that it consists an aggregation of smaller masses, separated from each other by more less irregular bands of connective tissue. At a later period, that is say, seven or eight weeks after inoculation, other nodules are found the neighbourhood of the original one, which, excepting that they a more disseminated, resemble the little masses already referred to, ea being enclosed in an indistinct capsule of reticular connective tis similar in character to that which enters into the composition of t nodule. On examination of the smallest of these granulations in t recent state, nothing can be discovered excepting that it is a mass round cells like lymph corpuscles. In sections of hardened tissue it found that these corpuscles are enclosed in a fine meshwork of fibres. have never seen this meshwork comparable in fineness to the alveo reticulum of a healthy gland, from which, indeed, it differs in sever important particulars. Not only are the septa thicker and coarser, l even in the smallest and presumably youngest granulations each cavit large enough to contain several cells, whereas in the ampullary netw the threads are never further apart than the diameter of a single corpu If, however, the comparison be made between the adventitious tissue the coarser network which occupies the lymph sinuses in the lymph glands, the resemblance is much closer, and it is still more striking regards a lymphatic gland in incipient fibroid degeneration; so compl indeed, is the correspondence of structure that the two are indistinguis able under the microscope. (See Plate VII., Figs. 3, 4, 6.) The which occupy the spaces between the fibres are for the most part simila lymph corpuscles; in some no distinction can be seen between nucleus cell, while in others there is a nucleus surrounded by a mass of less re tive matter, not much larger than itself. In addition to these ordi lymph corpuscles I have always found a certain number of much lar nucleated cells, exact representations of which are given in Plate VI Fig. 3 *a. b. c. d.*

In pencilled sections of single nodules it is found that the meshes the network are much smaller in the centre of the granulation than a its periphery, so that in the latter situation there are open spaces crossed by fibres of the reticulum, large enough to contain a considera number of corpuscles, which can be as easily pencilled out of them out of the medullary lymph spaces of the lymphatic glands. Of t relation of these subcutaneous nodules to the lymphatic capillaries regret to say that I know nothing, as I have altogether failed to m these vessels in the diseased tissues. Guided by the analogy of t adventitious to the natural adenoid structures, it seems extrem probable that the lymph stream passes through the peripheral netwo of the nodules in the same way that it does through the sinuses of t lymphatic glands. Sections under a low power show very distinc

* Professor Lebert makes some reference to them in his paper on the communi tion of tubercle to animals in Virchow's Archiv., vol. xliii. They are also vagu referred to by Villemin.

nodules are in the closest relation with the closely packed tissue in which the hair bulbs and cutaneous glands are em- hey are separated from it, however, by a sharp line of demar-

loose connective tissue between the muscular and tendinous common to find minute granulations, some of which are so require a lens for their detection. On superficial examination ht be regarded as of the same nature with those found in the iat they are really inflammatory in their origin is indicated by size of the cells, and their obvious development from connective puscles, as well as by the absence of any reticulum. I have erved any change in the muscular or tendinous tissues them- See Plate VII., Fig. 2.)

Observations relating to the Lymphatic Capillaries.

ne publication of v. Recklinghausen's researches in 1862* it was n by what sort of channels the lymphatic system commenced. w tissues in which anatomists had succeeded in filling them tion, most observers, including Brücke and Ludwig, regarded nere interstices not lined by any membrane. v. Reckling- ot only proved the existence of lymphatic capillaries but ated their structure by the method to which I have already ion to refer. This method consists in subjecting the tissue to n of an extremely weak solution of nitrate of silver (either by or imbibition) for a few seconds, and then exposing it to the which means the chloride of silver first deposited in the substance elements of the tissue assumes a reddish-brown colour. When od is successfully applied to the examination of the lymphatics, of dark-brown lines, (see Plate VIII., Figs. 1 and 2,) is nto view; these lines correspond to the edges of the epithelial more properly to the interstitial cement which separates them n other.

rangement and structure of the lymphatic capillary channels been satisfactorily made out in almost all the internal organs—in (Wywodsoff), in the liver (MacGillavry and Chrzonszczewsky), mucous membranes (His and Frey), in the pleura (Chrzon- y, Afonassiew, Dybkowsky), in the peritonæum (v. Reckling- nd Schweigger-Seidel). With respect to the last-mentioned s, the original discovery of v. Recklinghausen that the serous ommunicate with the lymphatic vessels, has been confirmed by vations of Schweigger-Seidel and Chrzonszczewsky as regards unication of the peritonæum with the superficial network of the c capillaries on the under surface of the diaphragm, by Dyb- as regards the costal pleura, and by Afonassiew as regards the ry pleura ; so that there can now be no doubt that these great play a most important part, not only in the physiology of absorp- in the diffusion and distribution of infective materials.

already stated that in the skin I have entirely failed in tracing tion of tuberculosis to the lymphatic capillaries. Professor f Berne), however, has been more successful.† His observations, few in number, are clearly of great importance in their bearing uestion whether or not the absorbents are to be regarded as the by which tuberculous infection is conveyed. His principal ex-

ecklinghausen, Die Lymphgefässe und ihre Beziehung zum Bindegewebe. in, 1862.
s, loc. cit. p. 285.

perimental results are as follows: a liquid consisting of finely comminuted cheesy tubercle from the lungs of a phthisical patient was injected in extremely small quantity with a hypodermic syringe into the peritonæal cavities of three guinea pigs. They were killed at periods of 26, 43, and 70 days after inoculation. In the first, miliary tubercles were found in the peritonæum at the point of insertion, in the serous investment of the liver, spleen and kidneys, in the diaphragm and in the lungs. In the second, the peritonæal lesions were similar but more extensive, in addition to which the mesenteric and bronchial glands were also diseased. In the third animal some of the organs affected in the preceding cases, and particularly the lungs, were free from disease, but the alteration of the bronchial glands was much more advanced, from which he concluded that they were infected directly from the diaphragm. In each case Klebs applied the method of v. Recklinghausen for the investigation of the condition of the lymphatics. It was found that the nodules which were confined to the peritonæal surface, were smallest and most numerous on the *centrum tendineum*. In the most minute of the miliary granulations a very distinct relation could be traced between the arrangement of the cells of the new growth and the rectangular network of lymphatic capillaries, (discovered by v. Recklinghausen,) which lies under the epithelium. It was observed that wherever there were tubercles the network was interrupted, and that the smallest tubercles were often situated at the junction of several lymphatic channels. The author admits that the tuberculous mass spreads into the intermediary substance (*Grundsubstanz* of v. Recklinghausen), between the lymphatic channels, but states that at the edge of each granulation it "streteh out in processes," each of which corresponds to a lymphatic channel within which he infers the new growth must have originated. He further believes that the epithelium of the lymphatic capillaries, which here and elsewhere consists of oblong plates with wavy contours, each containing an oval nucleus much smaller than itself, is transformed into "tubercle corpuscles;" or in other words that there is a proliferation of the lymphatic epithelium, similar to that which Rindfleisch * supposes to occur in tuberculosis of the omentum—the newly-formed cells first filling the lumen of the vessel and then bulging it out so as to take the place of the intermediary substance.

On the 24th of October I inoculated several guinea pigs by the method employed by Klebs. In three of these animals which were examined respectively on the 9th of January, the 19th of February, and the 10th of March 1869, I had the opportunity of verifying the perfect accuracy of his description, so far as relates to the distribution of tuberculous granulations on the peritonæal surface of the diaphragm; but I have been unable to trace any indication of the origin of lymphoid corpuscles from epithelial elements.

The results of my investigation of this question are as follows: The arrangement of the lymphatic vessels in the *centrum tendineum* depends upon that of the two tendinous layers of which the aponeurosis consists. Of these layers, the lower, which is the strongest, consists of fibres having the same direction as those muscular fibres of the diaphragm which take their origin from the ribs; so that they converge backwards and towards the middle line. The upper layer, which is much less distinct, has the same general direction as the muscular fibres which are inserted into the posterior edge of the central tendon. The fibres of the inferior layer are divided into bundles by splits or intervals of sufficient size to be visible to the naked eye. The lymphatic vessels of

* Rindfleisch, Lehrbuch der pathologischen Gewebelehre, p. 221.

æal aspect of the aponeurosis present themselves in two (Sinuses or lacunæ, which lie immediately underneath the of the peritonæum, embedded as it were in the basement (*Grundsubstanz* of v. Recklinghausen). (2) Radiating hich occupy the spaces between the tendons. The lacunæ most various forms ; they are scattered very irregularly on surface of the central part of the aponeurosis, occupying a er than that of the intervals which separate them from each Plate VIII., Fig. 1.) They communicate by tubular channels m a kind of plexus underneath the epithelium. Both the l the channels of communication are lined with an endothelium eauty and regularity, consisting of plates which differ from he veins and arteries in their larger size and remarkably tlines, a peculiarity of form which renders it impossible to em for any other epithelial structure in the body. They com- directly with the deeper layer of intertendinous radiating eady mentioned, by which the lymph is conveyed towards of the aponeurosis, there to be discharged into larger lym- nks which, according to Ludwig and Schweigger-Seidel, tend ie anterior wall of the thorax, and thus find their way to the ict. It is evident that if Professor Klebs is right in supposing uberculous new growth is either contained in the lymphatic or springs from their walls, the distribution of the diseased the tuberculized diaphragm must correspond to the arrange- ymphatic vessels above described. My investigations afford t to this supposition. They show (1) that as regards the nediately underneath the epithelium, the arrangement of the r granulations has no relation to the lymphatic lacunæ ; and he radiating intertendinous lymphatics never contain collec- mph corpuscles. The origin and growth of granulations on the face of the diaphragm consist here, as in the rest of the m, of the multiplication of corpuscles already existing and part of the affected tissue. By the examination of numerous iaphragms, I have ascertained that normal adenoid tissue, the usual characters, and differing in no respect from that nstitutes tuberculous granulations, is to be found under both serous membrane, and that it exists in such abundance in the hood of the superficial veins on the peritonæal surface of the is that it forms sheaths to those vessels. These sheaths are t and well marked, that in diaphragms not stained but merely transparent by steeping in glycerine, the course of the veins ced as opaque lines when the membrane is examined under a ; the adventitia of the superficial arteries presents no such es.

espondence with these facts as to the natural adenoid pulp I it in the animal examined on the 9th of January, all the granulations which existed on the peritonæal surface of the n were in relation with vessels, and that in the smallest granu- could be distinctly seen that the new growth sprang not from ntitia of an artery, but from the adenoid sheath of a vein. later dissections it appeared that each granulation eventually bove the surface of the membrane, first as a rounded elevation, wart or papilla, being finally converted by the flattening of its a round disc attached by the middle of one side to the surface embrane ; the other side being in contact with the opposed f the liver. If other evidence were wanting that the tuber- w growth does not originate from the walls of the lymphatic

vessels, it might be found in the fact, that although the distribution those vessels on the upper and under surface of the membrane is entirely different, the granulations found on the pleural surface were numerous as those on the peritonæal and had the same arrangement.

Additional Observations as to the Structural Changes observed the Liver.

The structure of the liver of the guinea-pig resembles very clo that of the rabbit, which has been minutely studied by Hering,* hardened livers it is easy to demonstrate the arrangement of the in lobular capillaries. In sections at right angles to the intra-lobular they are seen to converge from all sides to the axis of the lobule. tremely numerous near the periphery of the acinus, they diminis number towards the centre, by the repeated confluence of two into Consequently all the capillaries tend towards the axis, so that in e section cut longitudinally the direction of the blood stream may be rea determined. Thus the capillaries may be regarded as a framewo radiating cylinders in which the liver substance is contained, f up the whole of the space not occupied by the vessels; when necessarily follows that the liver substance, although in every s parallel to the general direction of the vessels, it looks as if it divided into separate masses, cannot really be so ; and that in reali must form a network of columns of cells, which, as regards the spa occupies is complementary to that formed by the capillaries. T columns do not (as appears to be the case in the rabbit) cons single rows of cells; for it is almost always seen, when they are cut a that at least two cells are divided.

The structure and mode of origin of the bile ducts, from their importance in relation to morbid changes, require special consider In the guinea pig the smallest bile ducts are cylinders $\frac{1}{1100}''$ in dia with lumina measuring $\frac{1}{4000}''$. Each consists of a membranous enclosing nucleated cells, the nuclei of which are of the same si those of the liver cells, and closely resemble them. In general terminal tubes are to be met with only in the inter-lobular spaces they can be often seen to penetrate into the peripheral masses of In certain laminar expansions of liver substance which are to be on the outer surface of the portal lymphatic glands, I have been a observe that these ducts lined with epithelium sometimes end in drical columns of true liver cells, the arrangement of which, alth much less regular than that of the epithelium, shows distinctly that surround an axial channel. In this case the relation between th thelial and gland cells corresponds completely to that which hol reptiles. In these animals the glandular cells form cylindrical col the constituent elements of which are arranged like epithelium regular and symmetrical manner round the axial duct. No such arra ment can be traced in the lobules of the guinea pig's liver, for her acinous type of structure so predominates over the tubular that latter is wholly indistinguishable. In the guinea pig the arrangeme the intra-lobular ducts is no doubt the same as in the rabbit, in w Hering has shown that they are minute channels hollowed out, as it w in the walls of contiguous cells. These channels run in a direc parallel to that of the radiating capillaries, and are connected with e

* Hering, Ueber den Bau der Wirbelthierleber, Sitz.-Berichte der Wiener A d. Wissensch. Bd. liv. p. 336; Schultze's Archiv., Bd. iii. p. 88. See also Eb Untersuch. über die Leber der Wirbelthiere, Schultze's Archiv., Bd. iii. p. 423.

oss branches of communication, so that the whole assumes
s in a longitudinal section) the appearance of a network of
ces; whence it necessarily follows that each bile channel
ie axis of one of the columns of liver cells already described.
of the structure to the original tubular type, when no longer
o conform to the general acinous plan on which the organ is
in the higher animals, will be seen to have an important
l bearing as indicating that the epithelial and gland cells are
omologous structures.

illary framework of the acini may be demonstrated in the
r by the method of His. (See Plate III., Figs. 1 and 2.) In ex-
e capillaries thus exposed, it is seen that in addition to their
e diameter as compared with capillaries elsewhere, they look as
e surrounded by a continuous sheathing of apparently homo-
mbrane irregularly scattered with round cells, the nuclei of
eadily stained by carmine. In the human liver the appear-
fectly similar. The researches of MacGillavry* have shown
heath belongs to the lymphatic system. He has found by
at in the liver, as in the brain, the capillaries are surrounded
channels which in fact are the beginnings of the absorbent
the gland. Following the capillaries towards the periphery
les, they enter the larger lymphatic channels, which stand
ts in a relation similar to that in which the pulmonary
stand to the bronchi. At the hilus and in the ligamentum-
uodenale they pass through a number of lymphatic glands,
doubt in close relation with the masses of adenoid tissue
I have already said, are to be found even in the healthy liver
al canals.

ds the general structural character of the changes which are
in the liver by the tuberculous infection, I have nothing to
former statements. They have been since described by Dr.
d by Dr. Fox, whose accounts agree in all essential respects
wn. The chief change, says Dr. Fox, "is the appearance
ue of a glistening, semi-transparent character, which occupies
tance of the organ to a variable extent. Sometimes it only occurs
specks of the size of a pin's head or a poppy seed; sometimes
arger masses; sometimes it runs in lines, mapping out the
ry distinctly; sometimes it is found in irregular masses in
here is no trace of liver structure visible to the naked eye;
onditions before described may be reversed, and remains of
looking liver tissue may be seen running in lines irregularly
the semi-transparent tissue."† The observations of Dr. A.
lthough short, are comprehensive and very clearly expressed.
from Dr. Fox and myself only in one particular, namely,
that although the new growth, as a rule, originates from the
lar spaces, distinct masses of it are sometimes found either
e intra-lobular veins or even in the substance of an acinus,
not continuous with the larger layers or masses by which the
e separated from each other.

eing, therefore, a complete concurrence of observation as to
al features of the process, we are in a position to proceed to

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llavry, Zur Anatomie der Leber, Sitzungsbr. der Wiener Akad. 1864,
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c. cit. p. 12.

Petroff, Prof. in Kasan, Zur Impfbarkeit der Tuberculose Virch. Archiv.
129.

the examination of the other questions which suggested themselves at the close of my last year's inquiry; as, for example,

1. From what normal structure does the cellular reticulum, which at first constitutes the whole of the new growth, originate?

2. What is the ultimate destiny of the diseased parts?

I propose to consider each of these in succession.

Relation of the new Growth to existing Structures.—In the liver, as in the lymphatic glands, different parts of the same organ are always found to be in different stages of alteration. Thus at an early period, as, for example, six weeks after infection, the only changes which can be discovered by the naked eye consist in general enlargement and unnatural paleness of the whole organ, with granulations, masses, or laminæ of transparent material scattered through its substance. But on minute examination, even of the most healthy parts of such a liver, important structural alterations are discovered, both in the acini themselves and in the inter-lobular tissue. In cross sections of the inter-lobular spaces, *e.g.*, sections made near the surface in planes parallel to that of the capsule, it is seen that the inter-lobular vessels and ducts, instead of being in immediate contact with the peripheral ends of the columns, are sheathed in adenoid reticulum. The meshes of this reticulum are in some parts so minute as to contain only single lymph corpuscles (Plate IV., Fig. 4,) while in others they are of various sizes. The larger spaces contain veins or arteries (lymphatics?) and ducts. The smaller enclose masses of lymphoid corpuscles, the position and relations of which may be correctly stated by saying that they and the fine reticulum by which they are held together, fill up all the space not occupied by the vascular structures above mentioned. In pencilled sections these masses are apt to be removed altogether, so that the network which occupies the portal canal appears much coarser than in its original condition. (See Plate VI. Fig. 3.) The portal veins and arteries are unaltered, but it is constantly observed that the ducts, and especially those that are in immediate relation with liver cells, are enlarged, and that their epithelium has lost its regularity of arrangement. From the examination of a great number of similar sections, I infer that in the inter-lobular spaces the disease begins as an overgrowth of the normal adenoid pulp of the portal canals. In the acini the first change observed is a remarkable one. It consists in dilatation of the radiating capillary blood channels and in the appearance of corpuscles in great number within these channels, many of which cannot be distinguished from the colourless corpuscles of the blood, while others differ from them both in size and appearance. They measure from $\frac{1}{4000}''$ to $\frac{1}{1200}''$; the larger are nucleated, the smaller might be described as themselves nuclei. (See Plate III., Fig. 4, and Plate VI., Fig. 4.) Here and there they collect in great numbers, so as to choke up the vessel in which they appear to be contained. They differ mainly in their variability of size from the corpuscles of the reticulum, which seldom exceed $\frac{1}{3000}''$ in diameter. These appearances clearly admit of two interpretations. It may be supposed, either that the bodies in question are in reality what they seem to be, or that they are corpuscles which have originated in the vascular sheath, and have grown into the capillaries. It is not possible to determine by direct observation which of these views is the true one.

As a strong ground for believing that the bodies in question are inside of the capillaries, it is to be borne in mind that the existence of large numbers of colourless corpuscles in the blood vessels leading from adventitious adenoid tissue, is a condition which has been already met with in our study of the omentum; and further, that in all probability the spleen during its first stage of morbid overgrowth delivers

portal circulation many more colourless blood corpuscles than ural condition. The large size of the corpuscles seems to me much against the one view as the other; for in this respect r as completely from the colourless corpuscles of the blood as se of the adenoid reticulum. Whatever may be the origin of lies, it is certain that their presence must conduce, with other be immediately mentioned, to obstruct the intra-lobular circu- or it is constantly observed that the vessels in which they are e either obliterated or plugged with blood discs.

ventual result of the morbid process is the conversion of the gan into a mass of semi-transparent aspect, which resembles both stence and structure a lymphatic gland in advanced fibrous ation. The steps which lead to this result are as follows :—We eady seen how all the tubular organs in the portal canals lie in rk of transparent intermediary substance continuous with that forms the adenoid reticulum, and that in an early stage of this network becomes coarser and more distinct. It is very to trace this structure into the acini, so long as their condition is d; but in preparations of the kind represented in Plate III., Fig. 1, h the intra-lobular vascular network is freed from the liver cells cilling, I have always found that bands or strings of hyaline ce bridge over the interspaces between the capillaries at dis- which evidently correspond to the width of the liver cells ; so that y own observation I am inclined to concur with those who believe organ is pervaded throughout by a framework of hyaline bands, has the same relation both to the capillaries and to the cellular ts of the organ as that which exists between the corresponding res in the lymphatic glands. Whatever conclusion we may it as to the presence of the so-called *tela conjunctiva* in the healthy there is no doubt that as soon as the tissue of a lobule becomes d by tuberculous disease, the existence of such a framework be- obvious ; and that the first change by which the encroachment of er-lobular new growth of the glandular tissue is indicated consists development of transparent bands or threads, in the interlacing of the capillaries and liver cells gradually become involved. The ement of these bands is such, that in proportion as they become r and stronger the affected tissue is converted into a fibrous looking ork, in the holes of which the original elements are imprisoned. s way the liver cells become broken up into masses which are ted from each other by septa of transparent material. Hence two s follow—on the one hand the capillaries collapse and lose them in the trabeculæ of the newly formed stroma, while on the other ver cells, which at first struggle for existence with adventitious ar elements in the loculi of the stroma, finally waste away, the us often remaining after the body of the cell has disappeared.

ultaneously with this change the terminal bile ducts become the f another and most remarkable alteration. In all specimens in which iseased process is far advanced, certain spots are to be observed in ections which are distinguished by their extreme transparency, not y from those parts in which the liver cells are still in situ, but from eneral mass of diseased tissue of which they form a part. The trans- cy of these spots is found to be due to the fact that the loculi, d of containing liver cells or the remains of their disintegration, ccupied by bile-duct epithelium. In comparing them with sections rmal bile ducts it is found that the form and measurement of the are identical, and that they differ in nothing excepting the irregular

size and contour of the loculi themselves, and the absence of any arrangement in their contents. The only other view which can be entertained of their nature is that they are liver cells which have lost their granular contents, retaining their nuclei; in favour of which it is to be noticed that loculi are often to be found which are partly filled with liver cells and partly with epithelial cells. (See Plate III., Fig. 3.)

The final stage of the process is easily described. All cellular elements disappear excepting a few scattered lymph corpuscles. What remains is a fibrous network in the arrangement of which that of the tissue which it has supplanted may still be traced. In other respects it resembles the corresponding structures which we have already studied in the spleen and lymphatic glands (Plate VI., Fig. 4). Thus it appears that the adventitious adenoid pulp of the liver is liable to a process of fibroid degeneration which corresponds in all its important features to that which affects the natural tissue in those organs of which it forms the essential constituent.

Additional Observations as to Tuberculosis of the Lungs.

In the lungs the lesions are so uniform in their character in all the animals I have examined that I have nothing to add to the general description given last year, and shall confine myself to those questions which were then left undecided, and to others which arise out of observations made since. These refer to the relations of the adventitious masses of adenoid pulp which were designated in my last report peribronchial granulations, with those which exist normally in the lung, as well as to the irongrey nodules.

Considering that these granulations occupy the same position and have the same structure as the normal ones, differing from them only in size, it is natural to conclude that the relation between diseased and healthy structure is the same in the lungs as we have already found it to be in the peritonæum. As to the significance of the semi-transparent nodules which have been so often compared to miliary tubercles, repeated observations have shown me that the structure represented in my fourth figure (see former Report) is uniformly met with in microscopical sections of these bodies; and that in fact the semi-transparent nodules are not so analogous to miliary tubercles as to blocks of lobular catarrhal pneumonia. They owe their transparency not to the structural elements of tubercle, but to cells identical in size and appearance with the natural alveolar cells of the lung. In order to understand the nature of the pathological process of which these nodules are the expression, the manifestations of disease must be studied separately in each element of the original tissue, *i.e.* in the alveolar cells, the alveolar and bronchial epithelium, the blood vessels and lymphatics.

The alveolar cells are nucleated bodies which are always to be found in the alveolar cavities of the healthy lung. Each probably consists of a solid envelope of transparent substance collected round a more refractive central part. They usually contain a good many granules of black pigment, which are embedded in the envelope along with other granules of different chemical constitution. When seen in the healthy injected lung they look as if they filled the spaces between the network of capillaries which covers the internal surface of each alveolus. This arrangement, although it is, I believe, quite accidental, has led to their being often described as epithelium, in consequence of which much confusion has been introduced into the subject. The true alveolar epithelium is very difficult to demonstrate. Its elements are much smaller than those

described, and correspond in structure and arrangement with the terminal bronchial tubes. The latter can be readily studied s recently prepared by v. Recklinghausen's method. In such he epithelium may either be examined *in situ*, or may be prepared separately. It consists of oval or oblong plates (Plate V., Fig. 4), which contains a spherical nucleus about half as wide as itself. pithelium nuclei are readily stained by neutral solution of carbronchial epithelium, when so stained resembles a collection of rpuscles, and when seen in double layer may be easily mistaken nulation, for which reason carmine staining is rather a hindrance lp in studying diseased lungs. On tracing this terminal epithethe lobule into which the bronchiole leads, it is seen to fade adually till it becomes imperceptible, the reason apparently at it is so exceedingly delicate that it is destroyed by any rdinary liquids used under the microscope. That the epitheelly does extend into the alveoli themselves without materially its form, has I think been satisfactorily demonstrated by zczewsky.*

alveolar walls of the healthy uninjected lung no structure can guished excepting the delicate elastic framework of fibres by ne septa are supported. But in the diseased parts these septa tened in a way which I described last year as analogous to the ng of the trabeculæ of the spleen and lymphatic glands by the ial growth of nucleated cells. That the irongrey nodules do not ntirely of alveolar cells may be readily proved by applying the of pencilling to microscopical sections made parallel to the sur- By this means all the alveolar cells may be worked out, while the cells are retained in their place by the connective substance of um in which they originate and are embedded.

imals killed at an early stage of tuberculosis, that is to say, our weeks after inoculation with tuberculous matter, no change ved excepting that the peribronchial adenoid pulp is increased, other words, that true miliary granulations are formed in the ourhood of the terminal bronchioles. This fact appears to afford y to the mode in which the irongrey nodules are produced. er the choking up of the air cells is a merely mechanical result of umulation of adventitious matter around the bronchioles or of a al process, there can, I think, be little doubt that the granulation to the block of lobular pneumonia in the relation of cause to effect, at when a kernel of adenoid pulp occupies the centre of a nodule t signifies that the nodule originated from it.

have, lastly, to consider the relation of the process to the absoressels. It has been long known that the lymphatics of the lungs e divided into a superficial and a deep system of vessels. In the he superficial lymphatics spread over the whole surface of the in the form of a network, the vessels following the divisions en the lobules. From this network the lymph finds its way, by s which sink into the depth of the lung along with veins, and then pany the bronchial tubes to their origin. In this course the atics form more or less perfect sheaths around the blood s and bronchi. When the lymphatics of the lung are injected

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rzonszczewsky, Ueber das Epithel. der Lungenbläschen der Säugethiere, Würz- Med. Ztscht. Bd. iv. p. 206.

ywodzoff, Die Lymphwege der Lunge, Wiener Med. Jahrbücher, Bd. xi. p. 1,

in the dog the mass may be traced even into the septa of the alveo... From the alveoli the lymphatic channels converge so as to form larg... vessels, which commence in the immediate neighbourhood of the bro... chioles and terminal arterioles. At these points of confluence, say Wywodzoff, collections of lymph corpuscles are always to be found which he supposes to be contained within the lymphatic cavity. Ho... ever this may be, the fact is of great interest as showing the close rel... tion between these masses and the absorbents. The observations Wywodzoff relate entirely to the pulmonary lymphatic system ... the dog. It has been shown by Afonassiew,* that if carmine is injec... into the pleura of the living guinea-pig, the liquid finds its way into t... deep lymphatics which accompany and surround the lymphatic tu... the course of which is indicated by the staining of the tissue; so t... there is every reason to believe that the superficial system of absorb... communicates with the deep system in the same way in the rod... as in the dog.

Conclusions.

1. The characteristic product of tuberculosis is not an aggreg... of shrivelled particles of irregular form, but a tissue compos... lymph corpuscles held together by a network of hyaline conne... substance.

2. There is a close structural analogy between this tissue and t... certain follicular organs belonging to the lymphatic system, *e.g.* follicles of Peyer, the ampullæ of the lymphatic glands, &c.

3. All the favourite seats of tubercle are naturally characterize... the presence of this tissue, which, from the analogy stated above, ... properly be called *adenoid*.†

4. The natural distribution of adenoid tissue in the body is in intim... relation with the lymphatic system. In the great serous membranes (w... v. Recklinghausen's discoveries have taught us to regard as wall... lymphatic reservoirs) it forms sheaths round the blood-vessels, or ma... of microscopical dimensions and irregular contour underneath ... epithelium. In the solid viscera it is distributed here and there in ... course of the lymphatic channels.

5. In the peritonæum, tuberculosis primarily consists in the enla... ment or overgrowth of these sheaths or microscopical masses of ade... tissue, and consequently the tuberculous nodules which are fou... have the same intimate structure, and stand in the same anatom... relation to the vessels and epithelium. In the viscera the essen... lesions also consist, not in new growth, but in overgrowth of pre-exis... masses of adenoid tissue.

6. The primary local lesion in artificial tuberculosis, whether the c... be simple wound or specific inoculation, consists in the development at ... seat of injury of granulations or nodules which have similar struct... characters with those of adenoid tissue elsewhere, but cannot as yet ... shown to be in relation with the absorbent vessels.

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* Afonassiew, Ueber den Anfang der Lymphgefässe in den serösen Häuten, V... Arch. Bd. xliv. p. 37.

† The term adenoid has been introduced into pathological nomenclature ... entirely different sense. It has been applied to tumours which consist essentia... overgrowth of elements belonging not to adenoid, but to acinous glands, *e.g.*, ... epithelium of the liver and breast respectively.

first step in the dissemination of tubercle, consists in its being primarily by the lymphatics (which convey it to the lymphatic which they are tributaries), and secondarily by the veins. nus entered the systemic circulation, it is distributed universally teries. The serous membranes seem, however, by preference riate it, and from them it extends by contiguity to the super- s of the organs which they cover.

final stage of the process consists in the tertiary infection of s of each diseased organ, which glands consequently undergo ent and induration, and eventually become partially caseous. rgement is due to the multiplication of cells in all the tissues gan, but more particularly in the alveoli—the hardening to a of fibrous degeneration—while the caseation consists in slow of the previously hardened and anæmic parts. From the first l is incapable of performing its functions, but it is not until on commences that the absorbents of the organ to which it are completely obstructed.

the liver of the guinea-pig, and in some other organs, tuberculous ndergoes a fibroid degeneration and caseation, the results of unnot be distinguished from those observed in the normal adenoid the lymphatic glands and of the spleen.

s regards the question of a specific contagium of tubercle, we very important to note that this is not as yet disproved by the traumatic tuberculosis. It still remains open to inquiry whether injuries which are of such a nature that air is completely d from contact with the injured part are capable of originating ulous process. The results of the following experiments under- at the instance of Mr. Simon, with special reference to this , seem indeed to suggest that they may not be so. Setons in carbolic acid were inserted in 10 guinea-pigs on the 24th of ber 1868, each animal receiving two. At the same time extensive s of both scapulæ were produced on five others, care being taken njure the integuments. No tuberculosis or other disease of inter- ans resulted in either case. These facts certainly point to the y of further investigation in this direction.

Explanation of Plate I.*

Fig. 1. A knot of capillaries from the peritonæum in the neighbourhood of the pancreas. *a.* Arteriole. *b.* Vein. *c.* Mass of lymph corpuscles in which the capillaries are embedded. *d.* Network of omentum. From a healthy guinea-pig; the vessels have been filled with carmine by Chrzonszczewsky's method. Magnified 460 diam.

Fig. 2. An artery partly surrounded by a vascular, adenoid sheath; from the same preparation as Fig. 1. The large connective tissue corpuscles (*a.a.*) stained with carmine differ from lymph corpuscles principally in size. They present the appearance of round or oval masses in which neither granules nor nuclei can be discovered. Magnified 650 diam.

Fig. 3. A vein and artery from the same preparation. The vein is filled with colourless blood corpuscles or lymph corpuscles, some of which are stained, while others remain of their natural colour. Magnified 650 diam.

Fig. 4. Mass of adenoid tissue surrounding capillary loop; the smaller vessel can be traced directly from an artery, the larger opens into a vein. Magnified 460 diam.

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* All the figures on Plates I.—VII. were drawn by the artist from the microscope, with the aid of the "neutral tint reflector." Those on Plate VIII. were drawn by myself with the drawing prism.

Fig. 2.

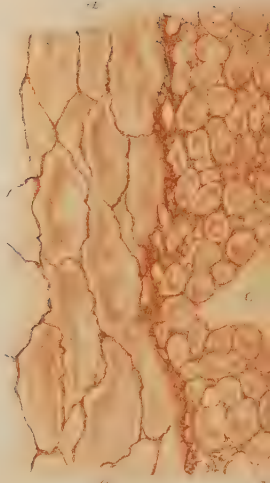


Fig. 3.

Explanation of Plate II.

g. 1. Part of a vascular anastomosis from the peritonæal fold sing the pancreas, from a tuberculized guinea pig. The drawing s the relation between the tuberculous nodules and the larger ls of the peritonæum. The vessels occupy the axis of a cylin- l sheath in which two kinds of tissue can be distinguished, viz. : denoid layer externally and fat cells internally. The nodules, h are of extreme transparency, are outgrowths from the adenoid of the sheath. *a.a.* Nodules. *b.* Peritonæal membrane. Mag- d 7 diam.

g. 2. Part of vascular sheath from the same preparation magnified diam. *a.* External adenoid layer. *b.* Internal adipose tissue.

g. 3. Aggregation of lymphoid corpuscles underneath the peritonæal helium in a healthy animal. *a.a.* Network of omentum. *b.* Nuclei pithelium. Magnified 650 diam.

g. 4. Epithelium of healthy omentum, prepared by v. Reckling- sen's method. *a.a.* Epithelium covering an artery and vein. Epithelium covering the adenoid sheath. At *c.* the epithelium ficient. Magnified 650 diam.

g. 5. Epithelium covering a tuberculous nodule. Magnified 650 n.

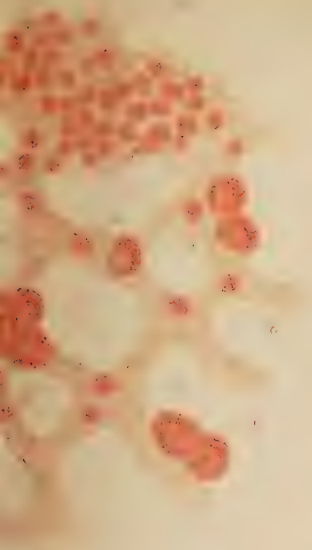
Explanation of Plate III.

Fig. 1. Tela conjunctiva of the human liver. *a.* Granulation adenoid tissue. *b.b.* Nuclei embedded in the sheaths of the cap laries. *c.c.* Liver cells, most of which have been removed from t framework by pencilling. (From a case of general lymphoma comm nicated to the Pathological Society by Dr. Murchison). Magnifi 460 diam.

Fig. 2. Reticulum of liver of guinea-pig in early stage of tuberculos *b.* and *c.* as in Fig. 1, magnified 460 diam. The two drawings a intended to illustrate the mode in which overgrowth of lymph c puscles commences in the sheaths of the capillaries of the acini, whi sheaths collectively constitute what is called the tela conjunctiv They further show the anatomical correspondence between lymphor and tuberculosis.

Fig. 3. Liver of guinea-pig, No. 56, (2d series). *a.* Vascular spac containing lymph corpuscles and coloured blood corpuscles. *b.* Liv cells. *c.* Reticulum. *d.* Nuclei of epithelium contained in dilated b ducts. Magnified 460 diam.

Fig. 4. Section of the same liver in an earlier stage of alteratio *a.* Vascular spaces. Many of the lymph corpuscles are of large si and nucleated. *b.* Liver cells. Magnified 460 diam.



Explanation of Plate IV.

Fig. 1. A medullary cylinder of a healthy lymphatic gland. *a* inder of adenoid tissue in the meshes of which numerous lymph puscles are embedded. *b*. Coarser network of lymph sinus from ch the lymph corpuscles have been removed by pencilling. Mag- ed 650 diam.

Fig. 2. Summit or extremity of an ampulla. *a*. Reticulum of the pulla. *b*. Limiting membrane of the ampulla, the structure of which ers from that of the reticulum only in the closeness of the filaments which it consists. *c*. The lymph space. *d*. Fibrous connective sue which forms the cortical substance of the gland. With the ception of the few lymph corpuscles shown, all have been removed pencilling. Magnified 460 diam.

Fig. 3. Portion of the same ampulla. The figure is intended to show relation between the reticulum and the vessels. *a*. Artery, the ucture of which is seen indistinctly through the sheath of closely woven nnective tissue which covers it. *b.b*. Limiting membrane of the pulla, the structure of which is continuous with that of the sheath of artery. *c.c*. Reticulum of the ampulla, from the meshes of which lymph cells have been pencilled out. *d.d*. Capillaries, the sheaths which are united with the filaments of the reticulum. Magnified 0 diam.

Fig. 4. Reticulum adjoining an interlobular bile duct from which the mph corpuscules have been removed by pencilling. The meshes of reticulum are oval, their long axes being in the same direction as the e duct and the vessels accompanying it. Magnified 460 diam.

Fig. 5. Cross section of four bile ducts, surrounded with adenoid sue, from the reticulum of which almost all the lymph corpuscles ve been pencilled out. *a.a*. Bile duct epithelium. *b*. Reticulum. gnified 460 diam.

Fig. 6. Adenoid tissue in the neighbourhood of a minute branch of hepatic artery. (From a liver in advanced fibroid degeneration in ich the hepatic artery has been injected.)—The reticulum is trans- med into a sponge-like tissue in which laminæ take the place of ments. Lymph corpuscles, many of which are nucleated occupy ne of the loculi. Magnified 460 diam.

Fig. 7. Lymph corpuscles from blood of portal vein of guinea-pig, . 56, (2d series). Magnified 460 diam.

Explanation of Plate V.

Fig 1. Nodular tubercular overgrowth of adenoid vascular sheath from the omentum of a tuberculized guinea-pig, killed four months after inoculation. The abdominal organs have been injected with Beale's blue, by the cœliac axis. The preparation demonstrates the extreme vascularity of tuberculous new growth. The capillaries of new adenoid tissue being of great delicacy, they cannot be made out without injection. In the present instance the injection had passed into the veins, many of which were slightly coloured. Magnified 460 diam.

Fig. 2. Section of a pulmonary lobe of a healthy guinea-pig procured for the purpose of demonstrating that adenoid tissue, indistinguishable from that which constitutes tubercular granulations, exists in the normal lung. The section has been made so as to cut across the principal artery and bronchus of the lobe. *a*, artery ; *b*, bronchus—the brownish red bodies being imperfect cartilaginous rings ; *c*, mass of adenoid tissue surrounded by a layer of black pigment. This mass is cylindrical, the axis of the cylinder being parallel to that of the bronchus and artery, to which structures its relative position is always as represented ; *d*, alveolar tissue ; *e*, loose connective tissue surrounding the artery and bronchus. Magnified 60 diam.

Fig. 3. Apparently healthy lung of guinea-pig, No. 94, (2d series) inoculated three weeks previously by introducing tuberculous material into the peritonæum. The lung was first injected with Prussian blue by the pulmonary artery, and then filled to distension with warm solution of gelatine. In fresh sections stained with carmine of the lung solidified in this way, microscopical collections of lymph corpuscles (*a*) could be discovered here and there, all of which were in close proximity to small arteries or bronchioles. In the drawing a "granulation" of this kind is seen lying behind a minute arterial trunk which the knife has happened to truncate immediately in front of the centre of the little mass. Its rounded form is evidently due to its having grown into an alveolar cavity, the capillaries of which may be traced over it. The rich capillary network (*b*) which surrounds it belongs to other adjoining alveoli. Magnified 200 diam.

Fig. 4. Shred of epithelium from an infundibulum, stained with nitrate of silver. This epithelium does not cease abruptly where the internal surface of the infundibulum becomes continuous with that of the alveoli, but gradually loses its distinctness. I have failed in my endeavours to demonstrate an epithelial layer in the alveoli, but do not doubt its existence. Magnified 650 diam.

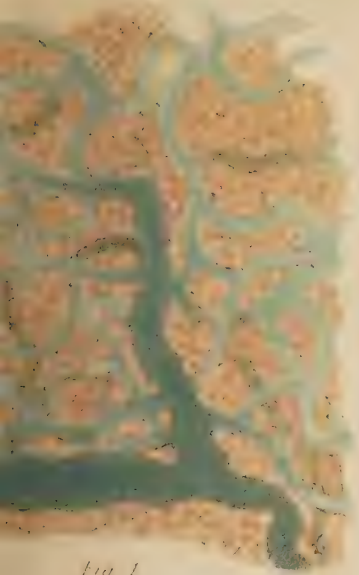
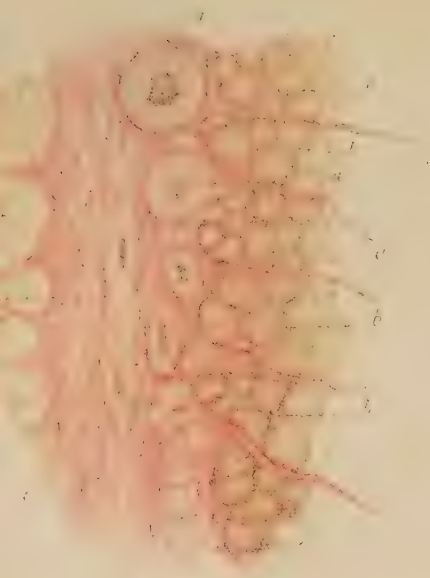


Fig 1

Fig 2



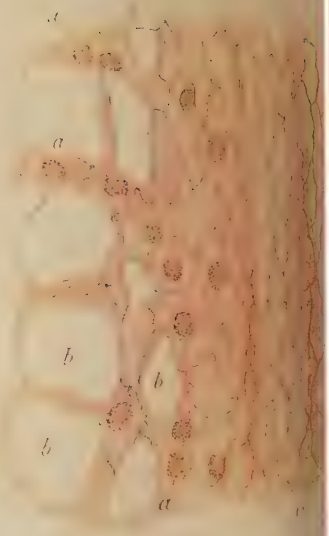
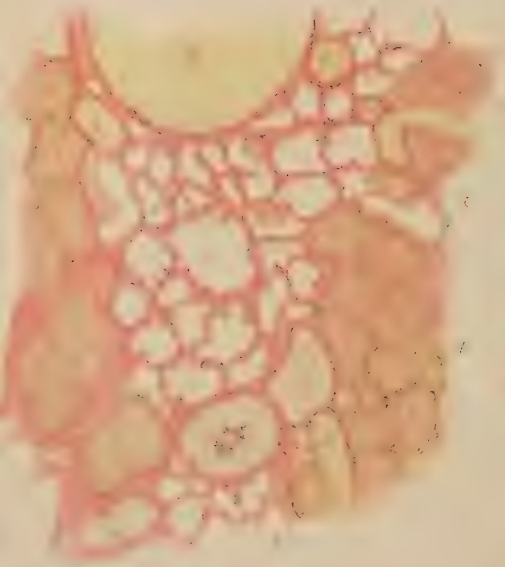


Fig 3



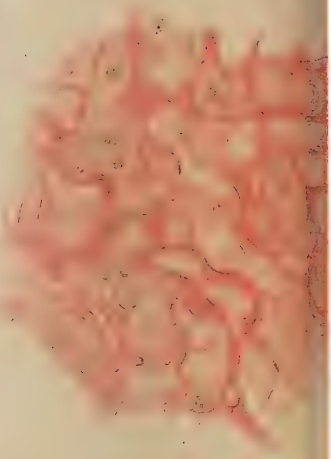


Fig 4

Explanation of Plate VI.

·. 1. Section of liver of guinea-pig, No. 56, (2d series), inoculated
·ks before death with transparent material from the supra renal
le of a patient who had died on the previous day of Addison's
:e. The section is vertical to the surface of the organ. *a.a.a.*
.obular bile ducts lined with epithelium. *b.b.* Ends of the con-
ng columns of liver cells of which an acinus is formed. *c.* Reti-
ı from the meshes of which the corpuscles originally occupying
have been removed by pencilling. From the obliquity of the
of section in relation to the interlobular septum, some parts of it
ır fibrous, others alveolar. Magnified 460 times.

ɾ. 2. Epithelium of the double layer of peritonæum which encloses
xtremity of the pancreas of the guinea-pig ; the drawing is intended
ıow the structure of this membrane, in relation to the frequency
which it becomes the seat of tubercular granulation. *a.* Nuclei of
pithelium, some belonging to the layer nearest the observer others
: layer opposed to it. The reticulated wavy lines represent the
stitial cement by which the contiguous elements (scales) are
d to each other. Those which intersect each other belong to
ent layers. The epithelium where it covers the vein (*v.v.*) is
fied in form, the scales being oval or oblong. *b.* Apertures in the
brane at the edges of which the two layers of epithelium are con-
us with each other. Everywhere else the space between the two
s is occupied either by vessels or by a meshwork of extremely
ne connective tissue fibres, which are continuous with the similar
: which forms the sheaths of the blood-vessels. This tissue is of
tenuity that even in preparations stained with carmine, it is not
guishable, unless the epithelium has been removed by previous
ration. The lymphoid corpuscles which exist in such numbers in
n parts of the same membrane are embedded and originate in this
ture.

ɾ. 3. Section of liver of guinea-pig inoculated four months pre-
ly by Dr. Fox with human tubercle. The section is parallel and
o the surface of the organ. *a.* Portal vein and tributaries thereto.
ction of an interlobular duct. *c.* Reticulum occupying the greater
f the portal canal. *d.* Cavity containing remains of epithelium.
fig. 1, the cells which originally filled the holes of the reticulum
been removed by pencilling. Some have contained adenoid pulp,
s liver cells (*e.*) Magnified 460 times.

ɾ. 4. Pencilled section of acinous tissue of liver in advanced fibroid
eration. The reticulum is so abundant, that it seems to constitute
hole substance of the organ. The liver cells as well as the adenoid
have entirely disappeared ; of the cellular forms that remain some
bly are epithelial nuclei, others which appear to be contained in
lar cavities, are I believe of the same nature as the corpuscles met
n the earlier stages of the process in the capillaries. Magnified
mes.

Explanation of Plate VII.

Fig. 1. Vertical section of capsule of spleen of guinea-pig, No. (2nd series). *a.* External surface of capsule, the epithelium be removed in making the section. *b.* Commencement of a splenic tra cula. *c.* Adenoid tissue forming a sub-peritonæal granulation, structure of which is continuous with and indistinguishable from that the capsule of the organ. *d.* Section of a vein. The margin at corresponds to the position originally occupied by a malpighian folli the structure of which can no longer be distinguished. A line conn ing the two asterisks would correspond to the natural direction of capsule. All that lies to the right of it may be regarded as new grow Magnified 460 diam.

Fig. 2. Section of a new growth occupying the connective tis adjacent to the tendon of the transversalis abdominis and in the imm diate neighbourhood of the inoculation wound; from guinea-pig, No. three weeks after inoculation. Magnified 650 diam.

Fig. 3. Section of a sub-cutaneous nodule of adenoid tissue in cl proximity to the inoculation wound, three weeks after inoculation. T plane of section is parallel to the surface of the skin. Magnified diam.

Fig 4. Section of the same nodule in the opposite direction. *a. b. c* Nucleated cells much larger than the ordinary lymph corpuscles, wh are met with here and there in the meshes of the stroma. Magnif 460 diam.

Fig. 5. Vertical section of capsule of spleen in advanced fibr degeneration. All the cells have disappeared, while the fibroid ba have increased remarkably in thickness. The deeply coloured m shown in the upper part of the drawing consists of the same hya structureless material of which the fibroid bands are compos Similar masses are met with throughout the diseased organ, sections which when stained with carmine appear when viewed with a len be scattered with red points. No trace of cells or nuclei can be dis guished either in the bands or masses. Magnified 460 diam.

Fig. 6. Section of the hilus tissue of a lymphatic gland in a sim condition of induration. *a.* A minute artery surrounded by a locul hyaline stroma, containing a few lymph corpuscles. Magnified diam.

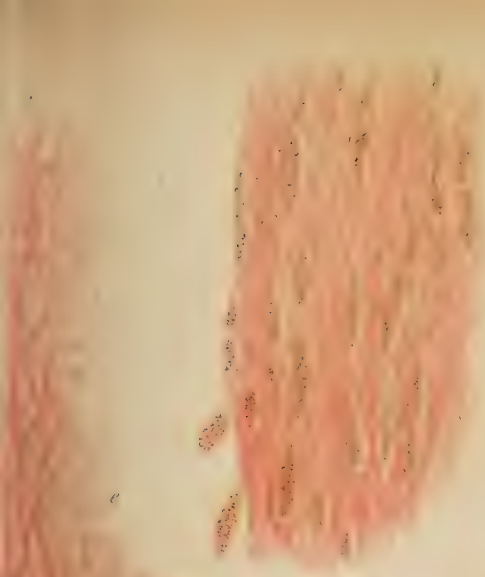


Fig 1

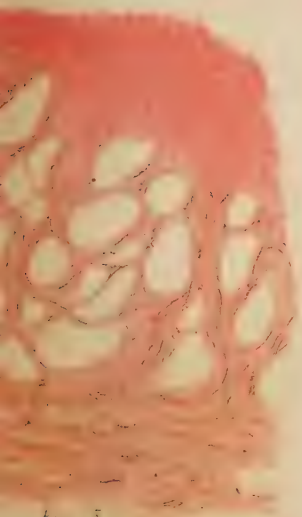


Fig 3

5

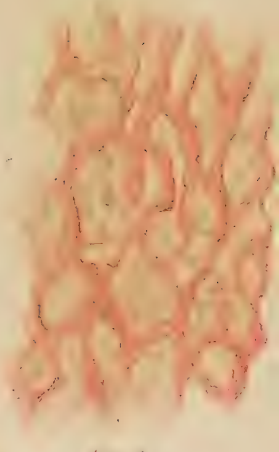


Fig 2

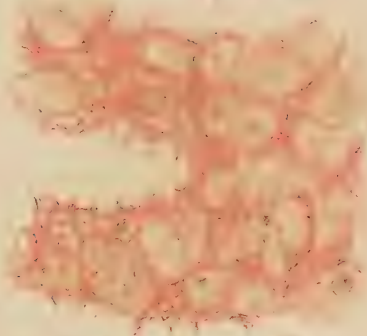


Fig 4

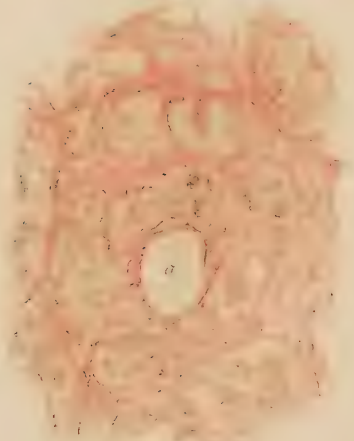


Fig 6

Vincent Brooks, Day & Son Lith

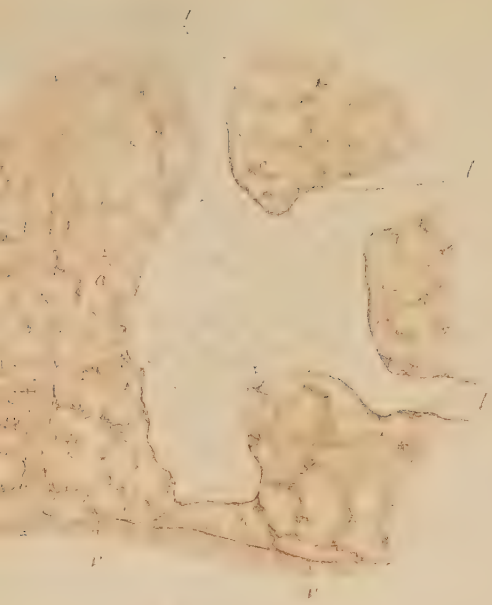


Fig 1

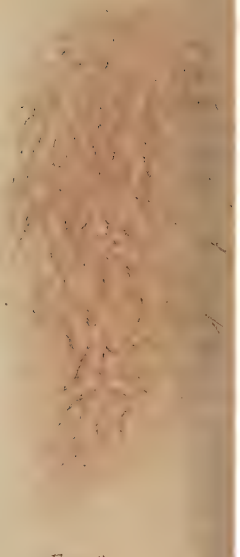


Fig 3

Fig 2

Explanation of Plate VIII.

ig. 1. A lymphatic lacuna from the peritonæal surface of the dia-
gm. *v.v.* Veins. *l.l.* Lymphatics. The dark lines which ramify in
spaces between the vessels are the so-called sap canals of v. Reck-
hausen. Near *a.* the limiting membrane of the lacuna seems to be
erfect. By altering the focal adjustment, the layer of epithelium
ch covers the deep surface of the lacuna can be brought into view.
superficial layer appears to lie immediately underneath the peri-
eal epithelium, which has here been removed by maceration.
gnified 207 diam.

ig. 2. Artery and vein, with accompanying lymphatic channel,
g immediately under the peritonæal epithelium. In the upper part
the preparation, the vascular structures, and sap canals are stained,
the staining has accidentally failed in the lower part. It is there
n that the vein is covered with an interrupted layer of lymph cor-
cles, of which there is no trace in the neighbourhood of the artery.
Artery. *v.* Vein. *l.* Lymphatic. *s.* Sap canals. *f.* Fibres of con-
tive tissue which lie immediately underneath the epithelium. *c.*
erior layer of central tendon of diaphragm. *d.* Split between two
allel tendinous bundles, into which a branch from the vein penetrates.
gnified 207 diam.

Fig. 3. Normal adenoid tissue of healthy lung from the mass repre-
ted in Plate V., Fig. 2. Magnified 490 diam.

Fig. 4. Minute artery and vein from the upper surface of the central
don of the diaphragm of a guinea-pig, into whose peritonæum a trace
tuberculous matter had been injected three months previously. The
sels are in the immediate neighbourhood of a tuberculous nodule, the
mph corpuscles of which surround the vein. This drawing may be
mpared with Plate I., Fig. 3. *a.* Artery. *b.* Vein, containing
merous lymph corpuscles. *c.* Superior tendinous layer of the centrum
dineum, on the surface of which the vessels lie. Magnified 490
m.

Appendix.

No. 6. *On Chemical Identification of Disease, by Dr. Thudichum.*

No. 6.—Further Report, by Dr. Thudichum, on Research intended to promote an improved Chemical Identification of Disease.

		Pa
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A.—*Notes on the Febrile and some other Morbid Processes with reference to their Chemical Investigation.*

Phenomena of the febrile condition.

The febrile condition is constantly associated with the follow abnormal phenomena :—(*a.*) Increased temperature of the body. (Increased disintegration of albuminous substances. (*c.*) Diminish muscular power. (*d.*) Diminished ingestion of nutriment. (*e.*) Diminish urinary water (*f.*) Diminished powers of the senses and of sensorium. These changes are common to all febrile states, no mat what may be their specific origin. I proceed to consider the two f conditions only, with the assistance of such chemical information a has hitherto been possible to gather.

Temperatures in disease.

44, nerve affections.

43·37 in dying.

41·87, agony.

41·75, or death line.

41·62.

41·25 as morning T. always fatal.

50 per cent. line.

Temperatures up to C. 44° occur in certain spinal injuries and acute tetanus. Next in order are temperatures which occur only dur the process of dying, 43·37° being the absolute maximum of T. (T. temperature) in fatal cases of typhus. At 41·87 begins the agony death. The line 41·75 is momentous, because hitherto no patient w typhus, whose T. has risen above that line, has been known to reco I have therefore termed this line the death-line. Patients with shiv ing fits in the morning may rise to 41·62 and not necessarily die ; when typhus patients reach the temperature of 41·25 in the morni they always die. The line at 41·12 may be termed the 50 per ce death-line, because one half of all patients going above this line From 41° to 40·37 range the average maxima of favourable cases, a from 40°·6 to 40° the average maxima of morning temperatures of same class of cases, more particularly of typhus fever. At 38·6

ne to the maximum of health, at 37·6 to the mean, at 36·76 to the inimum of health. At 36·5 we find certain cases of autumnal diarrhœa, ulating typhus and typhoid fever. This is also the death-line of lera. All cases whose temperature ranges persistently below this have, as far as the observations of the epidemic of 1866 went, died. e range of the minima of cholera cases is between 36·4 and 33·9, and lowest T. observed in any case of cholera is 32·9. See tables in 9th port, particularly Table 40.)

Morning T. of favourable cases.

36·5 is the minimum dead line of cholera.

Lowest T. observed in cholera.

In febrile and other diseases where there is no obstruction to any very at part of the circulation, the most accurate measurements are most ekly obtained in the cavities, rectum and vagina; but the same ults are obtained in the axilla, if the thermometer be allowed to main there until stationary. In some conditions, however, namely in lapse of acute cholera and in the agony of death, the temperatures the cavities are above the temperatures of the axilla :—*i.e.*, the heat oduced in the deeper tissues accumulates in them, not being carried ay again by flowing blood, but having to find its way slowly through lly conducting materials. For the same reason the temperature of a ly which has just died sometimes rises by several tenths or even an tire degree for some minutes, until the chemical effect of the stored ygen is exhausted ; when, with the venous condition of the capillary ood, the local death of the tissues takes place.

Difference of T. in axilla and internal cavities.

T. rises immediately after death.

The sensation of cold in the shivering fits of high fever is a decep- n of the peripheral sense of temperature, produced by the con- ction of the small blood vessels of the skin, and the contractile sues of that organ in general. From the moment that this asmodic effect ceases the fever patients have the sensation of exces- e heat. Their sense of temperature is constantly excited until in irium they fancy themselves on fire. One of the effects of this condi- n is that the heart makes increased efforts to circulate blood so as to tain a compensating reduction of the temperature by increased evapora- n from the lungs and skin. The number of the beats of the heart are vays greatly increased in fever ; and with this increased labour the art tends to become exhausted. A kind of artificial fever can be pro- ced by the Turkish bath, especially with its higher temperatures. First ere is sweating, then the pulse becomes rapid, and with arterial murmurs l a pulse of 140° per minute, and a rise of the temperature of the ly by one or two degrees as measured in the cavities, begins a state unconsciousness or anæsthesia, which differs entirely from syncope, th which it has been confounded, and is similar to the unconscious nditions of typhus and typhoid and other febrile patients. During s process of the production of anæsthesia by heat the powers of the scular system are constantly decreasing, until a degree of debility ual to that of the acme of typhus is reached. Very evident in ulthy persons, this effect is still more striking in persons suffering in some sorts of paralysis, with but a small amount of contractility in ir muscular system left.

Nature of shivering fit.

Artificial fever by Turkish bath.

Increased disintegration of albuminous substance is the second in effect of the febrile process. Its existence and amount are ascer- ned by comparative analysis of the urine. It is not maintained t the non-nitrogenous matters contained in and introduced into the ly during fever are not also disintegrated more rapidly. On the ntrary, this is very probably the case with all, such as fat, starch, and gar, and certainly the case with alcohol, as I have shown in the special pter relating to that body. See last Report, p. 282. It is also certain t the quantity of non-albuminous matters disintegrated or oxydised luences the quantity of albuminous matters oxydised in the same

Increased disintegration of albuminous matters.

Apparatus for collecting excretions.

time, by diminishing it; that heat, febrile or normal, may be produ by the oxydation of either, but is produced if possible first from n nitrogenous matters, and if these are absent or insufficient, then fi nitrogenous matters.

In order to the accurate measurement of these effects of the feb process the food and excretions have carefully to be ascertained analysed; and among excretions I of course include the products respiration. The urine has to be collected separately and complet as yielding one of the main and most important indications. In reg of persons who are not bedridden this is best done by means of spe apparatus such as I described in 1864, in the Journal of the Society Arts. And besides food and excreta, the body-weight of the patient

Respiration apparatus.

to be taken into consideration during the whole of the disease. All th desiderata can only be observed by the aid of particular arrangeme in hospitals, and by the aid of the large and expensive apparatus f constructed at Munich by Pettenkofer and Voit. Where these facili do not exist the research has to be limited to the determination of disintegration of the albuminous substances. This has hitherto mai been effected by the quantitative determination of the excreted urea

Liebig's, Davy's, and other analyses for urea.

means of Liebig's volumetrical analysis. Now although this gives main bulk of the products of disintegration, it does not indicate whole by several per cent. Some inquirers have therefore determi the excreted nitrogen as such, by means of particular processes (Da Neubauer). But my researches on uromelanine, omicholine, omich acid, have shown that chlorine, which was relied upon as a decompos agent in the analyses of Davy and others, does not decompose the produ

Chlorine does not liberate nitrogen of uromelanine.

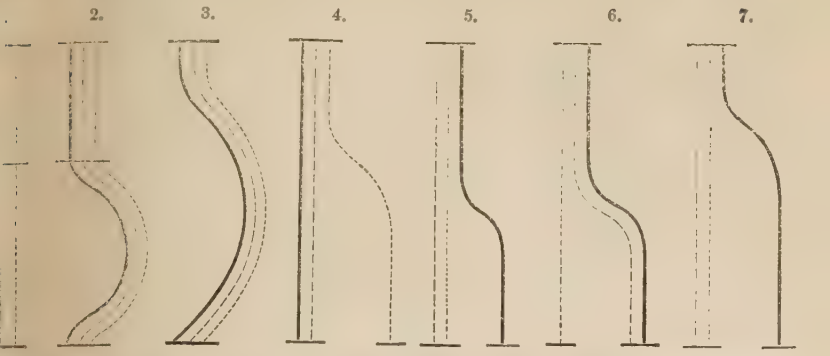
just mentioned in such a manner as to liberate their nitrogen, and t in short nothing but actual combustion with soda lime will set all nitrogen of urine free in the form of ammonia. Liebig's analysis con however, closer up to the actual amount than the chlorine proc because urochrome is precipitated by the nitrate of protoxyde mercury. As this amount of a compound, the nature of which is present only partly known, enters the account as tetra mercuric-ur nitrate, it introduces a source of inaccuracy for the elimination of wh the future will have to provide. A similar remark holds good w regard to creatinine, uric and hippuric acid. But these it is possible determine, although by difficult or circumstantial methods only. T indications of the quantity of urea or nitrogen in the urine are of cou the more important the more of it is derived from tissue juice and from daily food; for this proportion assigns the degree in which we one of the most common results of fever, namely emaciation.

Urine in acute fevers not qualitatively changed.

Generally speaking, the febrile process as exhibited in the urine i quantitative change without final qualitative alteration. At least, so as present information reaches, the ingredients of febrile urine do differ qualitatively from those of healthy urine, but are present, some increased, others like chlorides, in diminished quantities. The quali tive change which takes place in the febrile body occurs intermediat between albumen and urea; and to the rule that all anomalous produ of albumen become again urea, only one disease, malignant jaundice at present known to form a complete exception; and even here the ception is only complete in the most extreme cases. The products diseased action are destroyed in the blood like the pabulum of health

It is interesting to compare with our ordinary acute fevers a num of other diseases which vary the bearing of the constituents of food blood. Such a comparison, according to my conception of the m features, is represented in the following diagrams; where the continu lines indicate the course of the albuminous substances, the interrup

: that of the fatty, and the dotted lines that of the saccharine ients of assimilated food.



Explanation of diagrams.

)iagram 1 is that of health. The three factors run through the ıry function, indicated by a horizontal line at a place about $\frac{2}{5}$ths from top of the diagram. Diagram 2 is that of typhus fever. The three ors run through the biliary function, but deviate greatly from the nal afterwards; their products, however, return to normal qualities, urea, urochrome, carbonic acid, and water, &c. The third diagram trates what is believed to be the course of more virulent fevers, such ellow fever. All factors deviate immediately, the biliary function is performed, and death occurs at the height of deviation, or the func- s return to normal channels. Diagram 4 illustrates the course of etes. The amylon and sugar line alone deviates, and that to the end, e both albuminous and fatty matters follow the course of health. In ram 5, that of cystine disease, the albuminous matters alone deviate, e fats and sugars retain their ordinary course. In diagram 6, that of ous urine, sugar and starch follow the lines of health, while fats albumen are at least in part diverted. The 7th diagram exhibits the se of malignant jaundice, in which albumen only is diverted, sugar fat following the line of health. The disease, therefore, in these t features resembles cystine disease, but differs by the deviation of albumen taking place before the biliary lysis has been effected upon hile in cystine disease there is no interruption, but only a partial itative change of the biliary lysis, cystine being produced instead r as well as taurine. In malignant jaundice all biliary lysis ceases at ven period, and no taurine is formed. What has here become of the huretted part of albumen, which should have formed taurine (and ch in the other diathesis forms cystine) is not known.

nder all circumstances the greater part of the products of diseased on is destroyed in the blood like the pabulum of health, and turned ammonia, carbonic acid, and water, or their equivalents. Only in eme conditions, such as diabetes, or malignant jaundice, the process onversion indicated by one line or the other is entirely perverted, the products of the processes indicated by that line are entirely ormal. Thus in slight degrees or incipient stages of malignant dice there is as yet neither tyroine nor leucine, but the ordinary ary products. In higher degrees tyroine and leucine appear by the of urea, and in the ultimate fatal stages leucine and tyroine, with r abnormal products, assume the place of urea, which disappears rely from the secretion.

Relation of urea to temperature.

In febrile diseases such as are indicated by diagrams 2 and 3, there a certain relation of urea to temperature observed. But the explanati of this relation meets with difficulties, as several sources of error a found during its consideration. Thus it is impossible to say what w the amount of either food or tissue consumed, and consequently wh kind of waste, blood or tissue waste, the urea formed represents. Ne it is impossible to tell the nature of the decomposition preceding t formation of urea, and consequently to calculate the number of units heat evolved. And even if these were ascertained it would be pra tically impossible to determine the heat absorbed by the evaporati from skin and lungs, on the one, and that which has to be got rid of radiation on the other, hand. The error arising from the excretion a little urea by the skin is so small that it can be neglected.

Generally speaking, it may be affirmed (*a*) that in all diseases wi raised temperature urea is increased ; (*b.*) that the process which pr duces urea produces the fever ; and (*c.*) that the quantitative aberrati is preceded by a qualitative one, as shown in the diagrams. But th three conclusions can by no means be reversed, nor are they absolu though general, because (*d.*) urea may be increased (to double t normal standard) while temperature is lowered. This is the case in di betes. Diminished heat and diminished excretion of carbonic acid here hand in hand. (*e.*) Urea may be diminished in acute fever, if oth products are discharged instead, the decomposition-heats of which a the cause of the increased temperature observed. (Leucine, tyroi changed hematine.) (*f.*) These decompositions precede the urea form by the abnormal process, and their heats are therefore superadded to t heats, which possibly may be, but are not necessarily produced by t ultimate urea formation.

In diabetes urea increases, T. is lower, carbonic acid lessened.

Chronic diseases.

There are chronic diseases which in such respects as are here und consideration show features similar to acute. It is as if certain materi slowly accumulated in certain parts of the body, and presently split into secondary products of diseased decomposition ; this splitting evolving heat—the same as that which was absorbed or became lat during the synthesis in which the compound was made, in the plant animal ; and the secondary products getting oxydised with furth evolution of heat, till no diseased products ultimately remain. Su processes seem to be illustrated in the several stages of gout.

Nature of the specific changes.

Of the nature of the specific changes but little is known, and mu remains to be ascertained. This is indeed the most difficult task chemico-pathological inquiry. Some changes are primary, and conce matters which are yet in the intestinal canal, or already in the blo Others are secondary or results of fever. Many brain-diseases attend by delirium, and also tetanus, are accompanied with decomposition of t sheath of the nerve-fibre, which, as shown by the reaction with perosi acid, consists of cerebric acid ; and no doubt this decomposition may produced either by external heat radiated upon the part (as in sun-stro or by fever-heat operating through the blood. In acute softening of brain this decomposition advances so far that glycero-phosphoric acid constant product of the decomposition of cerebric acid, is met with in fluid which surrounds the softened part.

Glycero-phosphoric acid in softened brain matter.

Cases of diminished temperature.

It may be useful to draw attention to the causes and effects of di nished temperature, in order by the contrast to aid in the explanat of those of increased heat. The most direct and immediate cause sinking of the animal heat is failure of the heart's action, as in a faint fit. This, sudden and severe, may be caused by terror, or in weake constitutions even by slight impressions on the mind. A slower but s direct cause of the same effect is external cold. It acts physically by p

ing spasm. During immersion in very cold water (such as that which es from an alpine glacier with a temperature of 8° C.) the pulse ppears, the limbs shrink, muscular spasms appear in various parts of body, and the heart gives indications of a tendency to arrest its action. en elements for the production of heat are abstracted from the body in starvation, bleeding, and diarrhœa) the same result occurs. And so forms part of the state of collapse which many poisons (common morbid) produce. Partial paralysis acts by loss of motion only, but plete paralysis, such as paraplegia, *e.g.*, by severing of the spinal row, causes at first a great rise in the temperature. Sections of one of the spinal marrow produce paralysis of motion with diminished t on the one, and increased heat and hyperæsthesia on the other side.

During the impairment of chemical action in diminished temperature, ters collect which afterwards when they become oxydised (with or hout accidental assistance from exterior circumstances) cause an in- Chemical definition of
ise of temperature, or so-called reaction. But abnormal matters may "reaction."
collect by being produced quicker than they can be oxydised, and
en they are got rid of by the economy it is also by the process of reac- Chemical
n. Reaction (the manifestation of the chemical destruction of col- definition of
ed abnormal matters) begins with a period termed crisis; and crisis "crisis."
nderstand to be the point at which more morbid material is beginning
be oxydised than is produced in equal times.

I have not been able to convince myself of the existence of critical Critical days
s, as defined by Traube, namely, the uneven days from the beginning doubtful.
the disease. Though there might be clinical appearances, the
mical phenomena did not keep parallel to them. The circumstance
t in intermittent fever reaction and crisis are indefinitely repeated in Crisis in inter-
finite intervals, points to a limitation of the length of time during mittent fever.
ich abnormal matters may collect. In remittent fever the intervals
in closer approximation and observe no regular periodicity. In
hus and yellow fever, crisis and reaction are compressed within a Crisis in typhus
y short span of time, and may be possibly imperceptible unless and yellow
asurements and analyses are made at such short intervals as two fever.
rs.

In chronic diseases, on the other hand, crisis and reaction occur at Crisis in chronic
y long intervals. Thus in chronic intermittens, I have observed diseases.
m every 28 days in the male subject. Gout, again, may show them at
rvals of weeks, months, or years. However intervals may vary, the
cess shows the same course and derivation.

Carbon leaves the body in breath and urine. In the breath it occurs Collateral
carbonic acid and as carburetted hydrogen. The latter in health features of the
pears in small quantity, but may perhaps be increased in diseases. chemistry of
e symptomatology of the tongue may be enriched by observations on fever.
s point. For abnormal gases during expiration may exercise an Abnormal
uence upon the tongue as well as morbid kinds of saliva and buccal gases.
retions. The origin of the carburetted hydrogen gas is mostly in
intestinal canal. As marsh-gas, $\mathrm{C}H_4$, it is a regular constituent of Marsh-gas in
us, and of those great and painful collections of gas which produce tympanites of
tympanites of abdominal typhus. Possibly carbonic acid gas may typhus.
secreted from the blood into the intestine when the lungs fail in
ion. Thus in hydrothorax I have repeatedly observed tympanites and
tinued eructation of gas. These considerations derive great support
m the conception of respiration as being primarily an act of secretion,
fore it becomes one of absorption as well. But the fact has to be borne
mind, that most of the gas which occurs in the intestinal canal is the
duct of the decomposition of its contents.

A measure of disintegration of blood-corpuscles wanted.

The significance of the various nitrogenous bodies in the form which nitrogen leaves the body during fever, and their relation to ea other, can only be found by continued quantitative researches. Wh we know of urea almost suffices for a theory in which all factors are harmony. But we must have a measure of the disintegration of t blood, and that we can only find in uromelanine, or better still in method of determining urochrome with the same despatch as urea. Wi such a measure we could ascertain the quantitative effects of fever better than with the thermometer or urea analysis alone. The th mometer gives us a measure of the aggregate chemical changes; t urea a measure of the disintegration of albumen; but urochrome wo show us the amount of disintegration of the corpuscular respiring a oxydising part of the blood. Much of the efforts of pathologists mu therefore be directed upon obtaining this aid; and consequently m researches of the last two years have lain very particularly in th direction.

B.—*Waxy Degeneration, particularly of the Liver.*

Bacony liver, &c., discovered by Rokitansky.

Waxy degeneration affecting most organs of the body was first scribed by Rokitansky. He termed it bacony degeneration (Speck-leb on account of the peculiar consistence which organs, *e.g.*, the liv assume under its influence. He observed peculiar corpuscles from size of granules to that of larger animal cells, some of the larger ones which showed concentric rings. On account of their peculiar cons tence, and their tendency to break up under slight pressure like drops cold jelly, he termed them *colloid* corpuscles. He thus applied t

Difference between colloid degeneration and colloid tumors.

microscopic formation, the result of the morbid metamorphosis o natural tissue, an adjective which Laennec had applied to a pecul kind of tumor, a new growth. Some of the peculiar corpuscles exhil ing a concentrically stratified appearance, Rokitansky following P kinje, termed (first variety) amylaceous bodies, others (the sec variety) he termed *stratified colloid* corpuscles. (Pathol. Anatom. 116.) Virchow examining these corpuscles by means of iodine, obser that they assumed colorations varying from pale blue to blue gr violet, and brownish, but never purely violet or blue; on subsequ addition of sulphuric acid they assumed a blue, violet, or violet bro

Amyloid corpuscles.

colour. This induced him to term the bodies *amyloid* corpuscles, to attribute to them the properties of cellulose. (Virchow's Arch 6, 135; 6, 268; 6, 416; 8, 140; 8, 364.) Busk assented to t because he saw that the corpuscles became blue by the influence chloride of zinc-iodine (Quarterly Journal of Microscopic Science, 18 January). It was, however, often observed that organs which had general characters of this degeneration with iodine and sulphuric a gave only a mahogany coloration, and no blue whatever. (See I Bristowe and Ord, in Path. Trans. Vol. X.) And an analysis of extract by potash from a bacony liver, made by Kekulé, had yiel data which showed the extract to possess the composition of an al minous body. It became, therefore, necessary to establish a distinc

Distinction between waxy and amyloid degeneration.

between the bacony, or as it is now termed waxy, and the amyloid generation, and to examine the chemical differences between the processes.

An exquisite specimen of a waxy liver from a patient who had b under the care of Mr. Simon was therefore subjected to the follow examination. A part of the liver was ground to a pulp, extracted v cold water and filtered. The solution with a little acetic acid, or itself on boiling, as also with nitric acid, and subnitrite of mer

llon's reagent), gave the reaction of albumen. Evaporated, the lue extracted with alcohol, after evaporation of the alcohol a tion was obtained which gave no reaction with Trommer's test. sequently sugar was not present in the extract.

Cold water extract contains albumen, no sugar.

nother part of the liver was repeatedly extracted with boiling water, the extracts were united and evaporated to a syrupy consistence. enkofer's test gave no reaction, so that bile-acids were absent. No ır could be detected either in the residue or its evaporated alcoholic xact.

Hot water extract contains no bile-acids, no sugar.

he pulp, which had been extracted with hot water, was boiled with hol, and the decoction filtered hot. The filtrate was evaporated to ness and redissolved in a small quantity of boiling absolute alcohol. cooling of this solution a considerable quantity of cholesterine was osited. The crystals were mixed with drops of fat. The filtrate n this deposit was again tested for biliary acids, but none were d. With nitric acid a feeble reaction of green, blue, and violet was ined. As the alcohol reacted rather violently with the acid, the tion was diluted with twice its bulk of water, whereby a milky cipitate ensued. This was completely soluble in much acetic acid ty acids). When to the turbid solution chloride of iron was added ark yellow precipitate ensued, which may have been benzoate or cinate of iron.

Alcohol extract. Contains cholesterine, no bile-acids, little cholophæine.

A part of the liver was comminuted and heated with hydrochloric l. The dark purple solution was filtered, heated on the water bath, treated with small quantities of chlorate of potash, until the fluid sed to froth and was clear yellow. On the top there was some fat, the bottom of the fluid there was a small quantity of a yellow flaky cipitate. This was easily soluble in alcohol. It follows from this t gelatine is absent, and that the main bulk of the matter behaves e syntonine.

Fatty acids.

Benzoic or succinic acid.

No gelatine, but syntonine.

No part of the liver, fresh or extracted with alcohol, gave with iodine, iodine and sulphuric acid, any reaction indicating the presence of loid or cellulose matters. The particles only assumed a mahogany wn colour.

No amyloid reaction.

Results.—The waxy liver contained of abnormal substances syne, cholesterine, and benzoic or succinic acid. Biliary acids and ar were (abnormally) absent; a trace of cholophæine was present. ly very little fat was met with. Consequently the degeneration sists mainly in the displacement of gelatiniform tissue, and the ppearance of sugar and biliary acids, with the abnormal deposition syntonine (or a matter behaving like syntonine) and cholesterine.

Results.

—*Determination of the Quantity of Sugar circulating in the Blood in a case of Diabetes.*

t has been affirmed that the proximate cause of the symptoms of dia- es is melitæmia. And undoubtedly sugar has been found abun- tly in blood examined in the usual way after withdrawal from veins. t it was not quite certain that all this sugar, or any of it, existed in blood while circulating, and that there had not been a post-mortem rather a post-venesectionem change of some glycogenous material o sugar. Moved by these considerations Mr. Simon suggested the owing experiment, which was accordingly carried out at St. Thomas's spital. 69 grammes of blood were withdrawn by venesection from arm of a female diabetic patient. Of these 29 grammes were received ectly into 75 grammes of absolute alcohol yielding 104 parts of mix-

Question.

Experiment.

ture. This after two filtrations was by nitric acid and boiling fou
free from albumen. It was now examined with a saccharometer, to
more fully described in the following. In this apparatus a diabe
sugar solution of 4·75 °/₀ compensated (a) 0·72 ; (b) 0·71 ; (c) 0·
= mean 0·71 inches of scale adjusted to left turning oil of turpenti
The blood extract compensated 0·01 inch, equal to $\frac{4.75}{71.6} = 0.067$ °/
sugar in mixture. Multiplying this by $\frac{104}{29} = 3.58$ we get 0·2398 °/
sugar in blood. Taking the whole of the patient's blood at 4,500 cu
centimetres, it would after that rate contain 10·8 grammes of sug
The second portion of blood, measuring 40 cubic centimetres, which h
been drawn with the above, but not into alcohol, was after 24 h
standing treated in exactly the same manner as blood 1. Blood 40 gm
alcohol 103 gms., mixture 143 gms. In the saccharometer the filte
mixture compensated exactly 0·01 inch of left-turning turpentine. Co
sequently this second blood contained neither more nor less sugar th
the first. The alcoholic extracts, after evaporation of the alcohol a
resolution of the residue in water, gave the test for sugar with alkali
copper solution.

Result.

Jellett's polarimeter.

Jellett's Polariscope.—The foregoing observations were made wit
polarimeter which was invented a few years ago by Mr. J. H. Jelle
Professor of Natural Philosophy in the University of Dublin. As t
instrument is by far the most accurate polarimeter extant, but is nev
theless little known and less used, I think it almost a duty to give
short description of it in this place, accompanied with such illustrati
as will make its construction readily understood. The description w
closely follow the inventor's account, as given in vol. vii. of the Proce
ings of the Royal Irish Academy. The instrument represented in
woodcut, and which was employed in the foregoing analyses, is by M
Spencer, philosophical instrument maker, of Dublin.

Drawbacks of ordinary Nicol's prism.

In determining the plane of polarization of a ray by means of
ordinary Nicol's prism, the observer is required to arrest the rotation
the prism at the point at which the intensity of the transmitted light
at a minimum. But it is difficult to do this with very great accura
inasmuch as the observer is obliged to compare a shade of colour
with any other shade which is before his eyes at the same instant,
with his recollection of a shade observed at the previous instant.
insure any tolerable degree of accuracy the observation must be ma
very rapidly, so that the eye may receive the new impression while
former one is still quite fresh in the memory. The difficulty of do
this with accuracy in any case is obvious, but it is most felt in expe
menting on light reflected or transmitted by fluids. For here it is
possible to touch the instrument without producing a tremulous mot
in the fluid, and therefore in the image reflected or transmitted;
this motion while it lasts renders accurate observation very diffic
But if the rotation of the analysing prism be stopped for a suffici
length of time to allow this motion to cease, the recollection of the
viously existing tint will no longer be so fresh as to allow the compari
to be made with any very great exactness. The difficulty will be
creased, as is easily seen, when there is any amount of elliptic polariza
in the light which is to be examined.

Remedy by simultaneous tints.

The remedy for this difficulty Mr. Jellett sought in the construc
of an analyser in which the tints compared should be *simultaneous*,
consecutive. The double quartz plate of Arago was an attempt to rea
this conception. It has, however, no similarity in principle to, and
not approach in accuracy, the following instrument devised for
purpose by Professor Jellett.

a rhombic prism of Iceland spar, whose longitudinal edges should
e a length of about two inches, or a little more, is cut by two planes
perpendicular to those edges, so as to form a right prism, as in the engraving, Fig. 1.

Fig. 1.

Fig. 2.

Prism cut and divided.

This prism is next divided by a plane S S′ B, parallel to the edges and making a small angle with the longer diagonal of the terminal face D′ D ; one of the two parts into which the prism is thus divided is then reversed, so as to place the base uppermost ; the two parts are cemented together, as in Fig. 2, with the surfaces of section in contact, and ends of the prism thus formed are then ground and polished.

One half of prism turned 180° round centre of plane of section.

Now it is evident from the construction of the prism, that if two rays light parallel to the axis be made to traverse the two parts of the prism respectively, the lines of separation of the ordinary and extraordinary images in these two parts will be C A, C A′, Fig. 3 ; and as the angle between the plane of section and the longer diagonal is small, the angle A C A′ is nearly 180°. Hence the extraordinary refractions in the two parts are in nearly opposite directions ; and if the end at which the light is admitted be so chosen that these refractions shall be *from* the plane of section, the separation of the images will be nearly doubled.

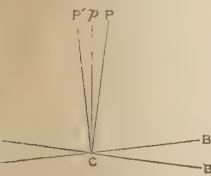
Peculiar refraction in new prism.

Fig. 3.

Now suppose a circular beam of plane-polarized light to traverse the prism in a direction parallel to the sides, and so as to be equally divided by the plane of section, the emergent beam will consist of three separate parts, viz., (1) a circular beam, O C O′, Fig. 3, formed by the union of the two ordinary beams ; (2) two
icircular extraordinary beams, E E′. If, then, the size of the incident
m be suitably determined, these latter may be completely separated
n the ordinary beam, so as to admit of their being stopped by a dia-
agm which allows the ordinary beam to pass ; the instrument will
n transmit a single beam of plane polarized light.

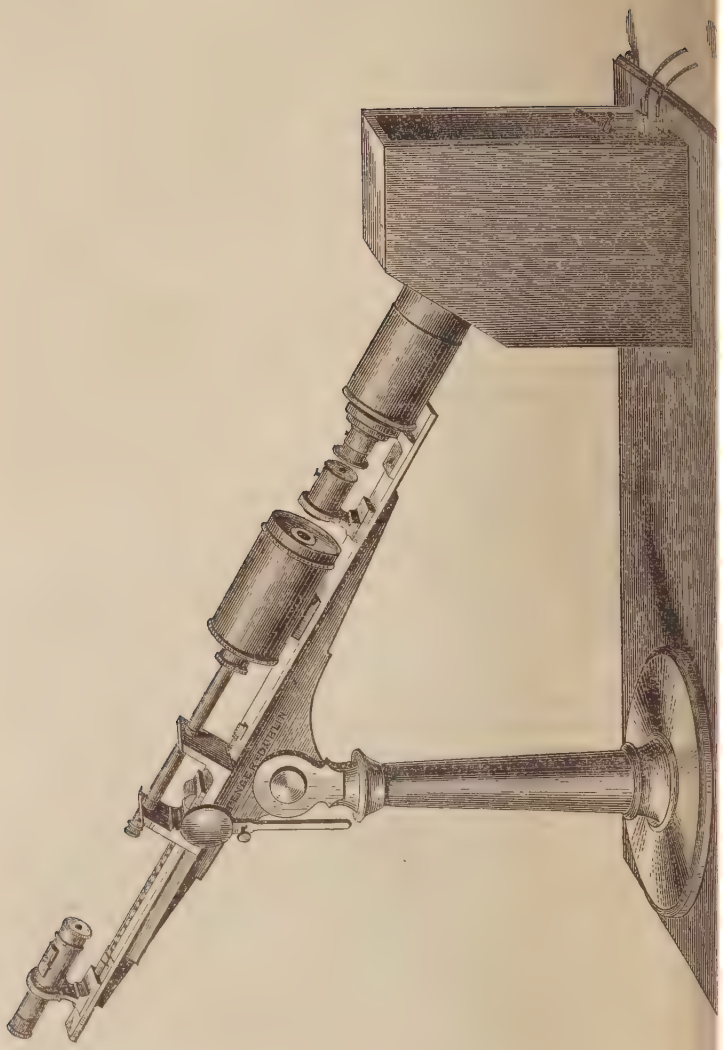
Now it is easy to see that the planes of polarization of the two parts
o which the beam is divided by the plane of section are inclined to each other at an angle somewhat less than double the angle D C S, Fig. 1. Suppose, then, that the plane of the paper being perpendicular to the beam, the traces of these planes of polarization are represented by A B, A′ B′, Fig. 4, and let C P and C P′ be perpendicular to these lines respectively. Let C p be the plane of polarization of the ray to be examined.

Fig. 4.



Then so long as there is any difference
ween the angles P C p, P′C p, the intensities of the two parts of the
m will be different, and conversely, if these intensities be equal,
s evident that the required plane of polarization will bisect the
le P C P′. The prism must therefore be turned on its axis until
equality of tints be established, and when this is done, the
ition C p of the plane of polarization is known. It is not, how-

Fig. 5.



or, necessary to determine the position of the planes P C, P′ C. e observer commences by transmitting a beam whose plane of larization is known, and turning the analysing prism until the ts become equal. The beam whose plane is required is then in-duced, and when the equality of tints has been re-established, the gle through which the prism has revolved, read off on a graduated cle, gives the inclination of the required plane to the known plane. is mode of determining the zero, a process which for perfect accuracy ght to be repeated with each new set of observations, possesses the vantage of eliminating the personal equation of the observer. In amining a beam of any considerable magnitude, there will be found different persons a tendency to think one part of the image darker an another, even when there is no real difference. With different servers, and even in the same person at different times, the part of e image thus preferred may be different, and if the zero were deter-ined once for all this might occasion sensible error. But as in the ethod here given such a preference will equally affect the position of e zero, it can have no influence on the final result.

In the first prism which Prof. Jellett caused to be constructed the gle between the planes C P, C P′ was about 7°. With this prism the nge of error in the determination of a plane of polarization was 7′, e light employed being the diffused light of the sky. Although is was a very much smaller range than he had ever been able to tain with a Nicol's prism, it seemed that a greater amount of accuracy ight be obtained, and as the brightness of the image appeared to be o great, a prism was constructed in which this angle was but half of s former value. With this prism and with the same kind of light the sition of a plane of polarization could be determined to 1′. With rect solar light and a prism in which the planes are still closer, a reater degree of accuracy may certainly be obtained ; in fact, it can be own that by diminishing this angle and increasing the brightness of ie light, so as to preserve unchanged the intensity of the image, the nsibility of the prism will vary as $\cot \frac{\theta}{2}$, θ being the angle in question.

The prism here described is fixed in the eyepiece or analyser of the paratus, the general aspect of which is given in the accompanying ig. 5. But while the rotation of the prism necessary for determining e zero point is effected by little screws fixed to the tube a little below ie ring by which the eyepiece is fixed to the beam on which the axis the instrument is carried, the mechanical rotation of the analyser r the finding of any particular plane is altogether dispensed with, and is function is transferred to a fluid which has the power of turning e plane of polarization in a direction opposite to that which it is tended to determine in the casual observation. This fluid may be y polarizing solution of stationary power. In the present instrument, owever, right or left turning spirit of turpentine is used. Of this pola-zing turpentine the rotating index per inch, tenth, or hundredth of an ch is ascertained as expressed in per cents. of sugar contained in solu-on in the analysing tube. The analysing tube dips into and moves up d down in the turpentine itself. This arrangement will be more telligible by the aid of the subjoined Fig. 6.

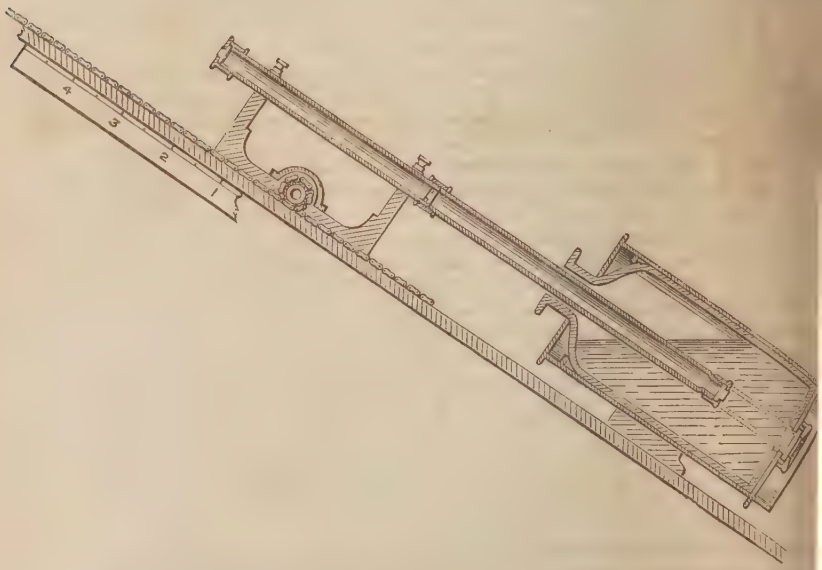
The order of events in an actual analysis now is as follows : (1.) *Find-g of the zero point.* A beam of parallel light produced in the closed ox at the end of the apparatus, by means of the oxyhydrogen-calcium ght and a compound condenser, is thrown in the direction of the optical xis of the apparatus. It passes first through the polarizing prism. he polarized beam then enters the bottom of the turpentine bottle. he long tube containing water is pushed down to the bottom

Fixing of the zero point.

Finding the index of the turpentine.

of the turpentine bottle, until its glass plate rests upon the plain sur face of the inside of the turpentine bottle. The arrow of the indicator is placed upon the zero point of the scale attached to the side (of which a portion is represented in Fig. 6), and the analysing eyepiece is now turned until the tints of the half-circles of its picture are equal. (2.) *Finding of the index of the turpentine as expressed in per cents of sugar.* The tube containing water, and intended to contain the fluid to be analysed, is now filled with a solution of dextrose sugar containing 10 per cent. of sugar, which turns the plane of polarization to the right. If the tube be replaced as before, the tints of the picture in the analyser will now be unequal. The tube carrying the sugar solution is now raised upwards by means of the milled-headed wheel, until the tints of the two halves of the picture in the analyser are again equal. By that means a column of oil of turpentine (turning to the left) will have been inter-

Fig. 6.



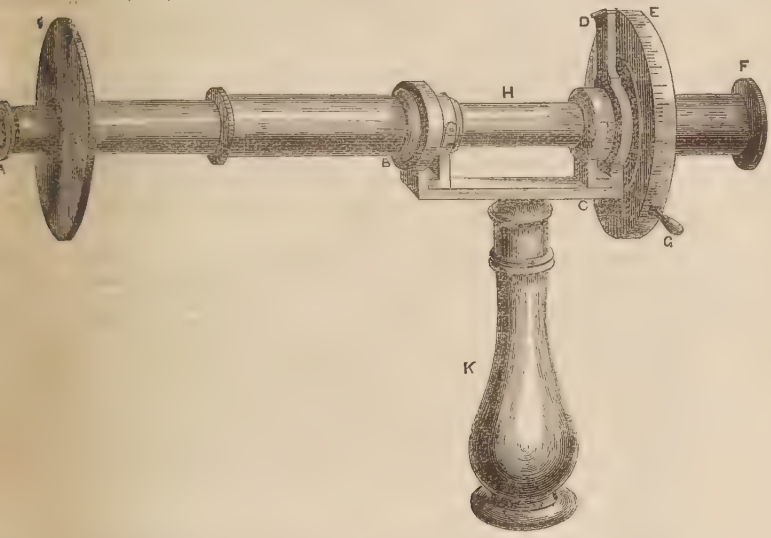
posed between the sugar solution and the polarizer (as shown in Fig. 6 which turns the plane of polarization as much to the left, as the tube fu of ten per-centic sugar solution turns the plane of polarization to the righ Both polarizations will have completely neutralised each other. Sup posing the arrow stand upon 1 of the scale, then a column of one inc of left-turning turpentine has been required to neutralise the pol rization of a solution of 10 per cent. of sugar in the tube. If no a solution containing either more or less sugar be placed into the tub a longer or shorter column of turpentine will be required to neutrali its effects. And as the effect of a column of one inch (in the abo example) is known to indicate 10 per cent., the effect of any lengt or its sugar-indication, can be found by the equation $1 : 10 = t : x$ in which t is the length of the turpentine column measured on th scale, and x the per-centage of sugar contained in the problematic fluid in the tube. I have not entered into minor details of the co struction of this apparatus, such as the chain in connexion with t milled wheel by which the closed tube is moved up and down in t turpentine bottle, or the long lever attached to the milled wheel f

icate adjustment. These must be studied upon the apparatus itself, l like the entire apparatus itself will be found to leave nothing to be ired in respect of mechanism. No other polarimeter approaches s instrument in accuracy for such saccharometrical purposes, as with e it indicates 0·01 % of sugar. But its disadvantages are that it uires powerful artificial light, that it is cumbrous and complicated and st be skilfully managed, and that its price is necessarily very high. It not yet be made to indicate the polarization of any particular ray of ht, say the yellow or the green, and it will probably be better not to empt to complicate it with any arrangement for that purpose.

Wild's Polarimeter.—This instrument, represented in Fig. 7, is very ndy for general purposes in which only approximative results are quired. It is held by the hand at K, and A is directed towards the

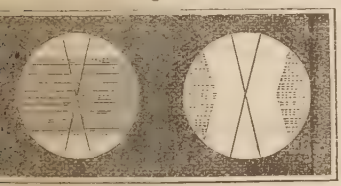
Wild's polarimeter.

Fig. 7.



ght of a candle, oil-lamp, or gaslight, while the eye is applied F. At A the tube contains a Nicol's prism. At B a Savart's olariscope is fixed consisting of thick pieces of quartz with inter- ediate lenses and a wire cross of the shape represented in Fig. 8. he eyepiece F carries a second Nicol's prism, which turns with e disk E, carrying the division of the circle on its circumference. or the greater convenience of manipulation a lever G is fixed in the isk. The zero point and nonius are immoveable at D, and B C is the arrangement by which the handle is fixed to the instrument. I is a black disk, intended to further screen the eye from the direct light, and H is the tube in which the fluid to be examined is placed. When the eye receives the transmitted light of the apparatus, while the divided circle is in any position except those where °, 90°,180°, 270° are exactly incident with the zero mark of D, then a

Fig. 8.



picture sketched in the left-hand circle of Fig. 8 is seen, consisting striæ of interference running horizontally through the entire field vision. But when 0°, 90°, 180°, or 270° are placed exactly upon th zero point at D, the transverse striæ are not visible in the middle of th field, where now the wire-cross alone is visible, as represented in th right-hand circle of Fig. 8. If now the tube X is filled with any flui possessing the property of circular polarization, and is placed into th position indicated in the engraving, and if at the same time the zer point at D is made coincident with 0° of the rotating disk, the striæ interference will be visible, and will only disappear after the disk E ha been turned a little to the right or to the left. In case the fluid con tained in the tube H causes a rotation above 5°, the striæ of interferenc only become weaker, but do not disappear entirely from the middle the field of vision in any position. If the rotation was less than 5°, an the point has been attained at which, as in Fig. 8, II., the interferenc striæ in the middle of the field of vision have disappeared, the observe may read the amount of rotation towards the left or right side which th fluid has effected by reference to the scale.

In case the rotation of the fluid amounts to more than 5°, it is advan tageous to employ monochromatic light for determining the amount polarization. This may be done simply by fixing a plate of red glas before the aperture A, or using as the source of light a spirit flame th wick of which has been drenched with common salt. With such ligh the striæ by interference disappear at a certain position of the analyse may the rotation be ever so great.

I am engaged in elaborating a combination of the method of Broc for determining the specific rotation of polarizing fluids with m spectro meter. Dr. A. Dupré has also informed me that he ha elaborated a new polariscope, but the mechanical details of thes attempts are not yet completed, and their description must therefor be reserved for a future opportunity. Seeing how many of th fluids or products of the animal body possess polarizing action, albu men, gelatine, the various sugars and dextrines, biliary acids, an others, we are not likely to form an exaggerated estimate of the valu of an accurate yet ready and expeditious method of polariscopy an polarimetry for physiological and pathological research.

D, E, F.—*Further Researches on Urochrome.*

Synopsis of the Products of Chemolysis of Urochrome.

A. Fixed Products of Decomposition by Sulphuric Acid.

Insoluble in ether, all soluble in ammonia.	Uromelanine	Insoluble in alcohol.
	Uropittine	Soluble, sparingly, in alcoh
	Urorubine	Soluble, easily, in alcohol.
	Metauropittine	Soluble in alcohol.
Soluble in ether and alcohol.	Omicholine	Insoluble in ammonia.
	Omicholic acid	Soluble in ammonia.

B. Volatile Products of Decomposition by Sulphuric Acid.

Soluble in ether		Essential oil.
As sodium salts in soluble in ether.	Acetic acid.	
	Uncertain volatile acids.	

D.—*Omicholine; and* E.—*Omicholic Acid.*

Synopsis of the Preparations of Omicholine and Omicholic Acid obtained in this research.

- I. } used up in first analyses and tests.
- II. }
- III. Putrid urine.

I. } II. } III.	United as B.	*a.* Portion insoluble in NH_3, or omicholine. Three elementary analyses. *b.* Portion soluble in NH_3, or omicholic acid. Two elementary analyses.
C. I. } D. I. }	Before boiling therefore united as C.	*a.* Portion insoluble, or omicholine. Four elementary analyses. *b.* Portion insoluble, or omicholic acid. Two elementary analyses.
C. II. } D. II. } D. III. } D. IV. }	United as D. (with C.) after boiling.	*a.* Portion insoluble in NH_3, or omicholine. Three elementary analyses. *b.* Portion soluble in NH_3, or omicholic acid. Four elementary analyses.

Mode of obtaining omicholine, &c.

Mode of obtaining.—The mixture of substances which alcohol extracts from the chemolytic products of urochrome (which are insoluble in the acid mother liquor and in water) is evaporated to a small bulk, and then poured into water. The precipitate is collected on a filter and washed until all traces of impurities have disappeared from the filtrates. The matter is now allowed to dry spontaneously, or in vacuo over sulphuric acid (not by heat, as the matter fuses and penetrates into and through the paper), and then in a flask extracted with ether. This operation is very difficult, as the matter cannot be powdered, and in the ether immediately settles in the form of smeary hard lumps. However, after weeks of continued extraction all resinous matter has passed into the ether, and a pulverulent matter, uropittine (perhaps urorubine), and some uromelanine, remain undissolved. The ethereal solution is of a light port-wine red colour, and peculiar, independently of the ether, penetrating odour. When the ether is allowed to evaporate spontaneously, or distilled off, a red syrup remains, which may become hard, but never shows any signs of crystallisation. It was this body which I had described as omicholic acid in the Hastings Prize Essay. The following will show that it is a mixture of two closely related bodies, which can, however, be separated to some extent, though imperfectly.

Separation of omicholine from omicholic acid.

Mode of separating Omicholine from Omicholic Acid.—The resin is treated with concentrated liquor ammoniæ and warmed. A portion dissolves, while another portion settles as a thick brown oily liquid. The alkaline solution is decanted and allowed to stand, when it will deposit more of the oily matter. (This portion is rejected, as being probably a mixture of omicholine and omicholic acid, which it is impossible entirely to separate.) When the alkaline solution in a covered vessel does not deposit any more oily matter, it is considered free from omicholine, and to contain only omicholic acid dissolved with ammonia, and some uropittine. The deposit is omicholine.

Purification of Omicholic Acid.—To the watery ammonia solution some ~~Ba~~Cl_2 is given, which precipitates most of the uropittine and any trace of uromelanine which may be present. (The ~~Ba~~ salt in one case gave 20 % Ba.) The filtrate is acidified with hydrochloric acid, which precipitates all omicholic acid as resin. It is washed with cold water.

If no uropittine be discovered by testing, sulphuric acid is added to th ammonia solution. In this case a precipitate ensues, but much omicholi acid remains in solution. On evaporation of the acid liquid it is depo sited in drops. All omicholic acid is easily taken up by ether fro the acid watery liquid or mixture.

Purification of Omicholine.—The deposited omicholine is mostly fre from uropittine and uromelanine, which easily dissolve in the water ammonia; but it must be well washed with water, and a trace of aci before it is pure.

Ultimate purification by ether.

Ultimate Purification of Omicholine and Omicholic Acid.—Each these bodies is dissolved in absolute alcohol, and to this solution si volumes of absolute ether are added. Any precipitate is impurity either uropittine or other matter. When the mixture remains clear th matter dissolved in it, provided it has been treated as above state must be considered as pure as in the present state of our knowledg it can be obtained.

Chemical properties of omicholine.

Chemical Properties of Omicholine.—It is semi-fluid to resinou becoming harder by keeping. It has a red colour and strong peculia odour. It is little soluble, or insoluble in concentrated caustic ammoni and does not combine with barium salts. It is soluble in caust potash, and again precipitated by sulphuric acid. It is a little solub in cold water on standing, a little more soluble in boiling water, with yellow colour; the solution becomes turbid on cooling. The cold water solution becomes turbid on addition of a little sulphuric acid; on heatin it clears up again. The watery solution, hot or cold, gives a precipitat with (1) sulphuric acid and iodine dissolved in iodide; (2) with mercur oxyde nitrate, yellow white; (3) with the same and subnitrite or nitrit of suboxyde a red reaction like tyroine. All watery solutions ar strongly fluorescent. Silver nitrate gives no immediate precipitate i the hot saturated watery solution, but on standing a precipitate i formed. Its spectral phenomena are most remarkable, and have alread been alluded to on p. 271 of the Report for 1868. The ether solution of a ruby red colour, but fluoresces green in the cone of the sunligh In the spectroscope it shows an absorption band in green.

$$141° 42' - 141° 12' = 0° 30' \text{ Int. 5. R. } \alpha.$$

Near to it in green there is a shading.

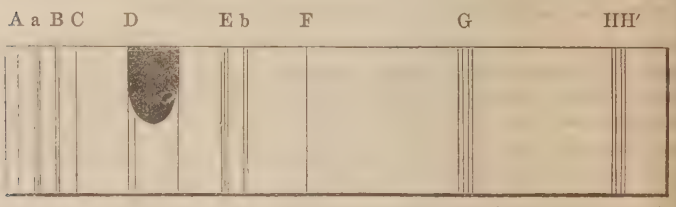


Diagram of Spectrum of Omicholine.

The red and yellow are very brilliant; the rest of the spectrum afte green has a violet hue, without any blue.

Physical and Chemical Properties of Omicholic Acid.—This acid is a red colour, resinous, fusing when heated, and giving out the aromati strong odour reminding of castoreum. It is little soluble in water, mo in ether, best in absolute alcohol. It dissolves in concentrated water

mmonia, and more easily in caustic potash. The ether solution, which ruby red, shows an absorption band in green.

141° 36′—141° 18′ = 0° 18′. Int. 5. R. *α*.

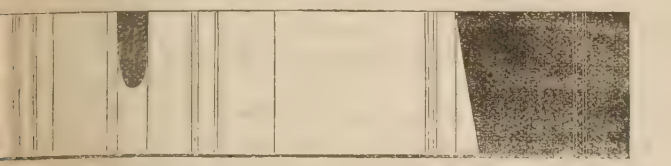


Diagram of Spectrum of Omicholic Acid.

The blue part of the spectrum is coloured violet. Green shaded at 1° 12′. Omicholic acid in chloroform has the same spectrum ; but as e solution can be obtained more concentrated than the ether solution, e violet, blue, and nearly the whole of the green part of the spectrum, e cut off entirely immediately to the right of the absorption band. he ammoniacal solution of omicholic acid has no bands in the spectrum. nicholic acid is red and fluoresces green in the sunlight-cone, or that the electrical lamp, but its phenomena differ slightly from those of nicholine.

Elementary Composition of Omicholine.

Specimen A.

The specimens A. I. and A. II., described originally in the Hastings ize Essay, when lately again examined had been dried and kept in cuo for three years. They were reddish-black, tough, hard, easily sing in heat, and of the most powerful peculiar odour. Six elementary alyses gave results such as might be expected from a mixture of nicholine and omicholic acid, of which the substance was subsequently und to consist.

Omicholine and Omicholic Acid. Specimen B.

Specimen B.

This specimen was suspected to contain traces of uropittine and uroru- ne, and upon it were performed most of the experiments which led to e information relating to the separation of omicholine and omicholic id given in the foregoing. The drops of omicholine, which before eatment with ammonia had been acid, after removal of omicholic acid, d much washing with water, remained alkaline.

From the omicholic acid in ammonia ~~Ba~~ Cl_2 precipitated flakes nich were dried at 100; 0·3364 grm. left after burning and heating th ammonium carbonate 0·1069 grm. barium carbonate, equal to ·28 % of ~~Ba~~ (uropittate). From the filtrates omicholic acid was covered by the addition of hydrochloric acid.

Elementary Composition of Omicholine. B, a.

Elementary composition of omicholine.

1. Dried at 85° C. 0·2621 burned with lead chromate, lastly with ygen, gave 0·6268 $\overline{C}O_2$ and 0·2318 H_2O, equal to 65·22 % $\overline{C}$ and 82 % H.

2. 0·1306 burned as before gave 0·3071 $\overline{C}O_2$ and 0·1207 H_2O, ual to 64·13 % $\overline{C}$ and 10·26 % H.

3. 0·1754 burned with soda-lime, &c., left 0·0396 $\overline{Pt}$, equal to 20 % N.

Found mean by analyses.

		Quotient by At. W.	Quotient by N = 1.
C	64·67	5·3891	23·5
H	10·04	10·0400	43·9
N	3·20	0·2285	1·
O	22·09	1·3806	6·04

Leading to formula C_{24} H_{44} NO_6.

Elementary Composition of Omicholic Acid. B, b.

Dried for 48 hours at 85° C. Contained a trace of iron.

1. 0·2042 burned in lead chromate, ultimately in oxygen, gave 0·476 CO_2 and 0·1496 H_2O, equal to 63·65 °/₀ C and 8·14 °/₀ H.

2. 0·2892 burned in soda-lime gave 0·0952 Pt, equal to 4·67 °/₀ N

	In 100.	Quot. by At. W.	Quot. by N = 1.
C	63·65	5·304	15·92
H	8·14	8·140	24·44
N	4·67	0·333	1·
O	23·54	1·471	4.41

Formula C_{16} H_{24} NO_4.

Synopsis of Preparations from Resins C.

Omicholine and Omicholic Acid.

Omicholine, C, a.
Omicholic acid, C, a.
Omicholine, C, b.
Omicholic acid, C, b. } Contained Ba salt 17·17 °/₀.
United form Omicholine, C, a. } With which O. and Oc. acid from
and Omicholic acid, C, b. } DI are united.

Uropittine.

Uropittine, C, α, 1 (⌣ from cold alc.),* Ba salt : 20·21 °/₀ Ba; A
salt : 21·39 °/₀ Ag. Peculiar Bearing with NH_3.
Uropittine, C, α, 2 (⌣ by ether). 4 elementary analyses.
Uropittine, C, α, 3 (⌣ by ether). Ag salt, boiled : 38·71 °/₀ A
Other salt, not boiled, 35·49 °/₀; Ag ; Ba salt 7·1 °/₀ Ba.
Uropittine, C, β, 1 (depos. from alc.) Ca salt : 1·78 °/₀ Ca ; 12·16 °/₀
Uropittine, C, β, 2 (do. on concentration) Ba salt : 21·77 °/₀ B
Ag salt, 27·14 °/₀ Ag.
Uropittine, C, β, 3 (⌣ by 5 vols. of ether). Ag. salt : 27 °/₀ Ag.

Uromelanine.

Uromelanine, C.

Treatment of the mixed Resins C.

(α.) *Extraction by cold Ether. Isolation of Omicholine and Omicho Acid.*

The mixture was exhausted with cold ether, which assumed a po wine red colour, becoming lighter at every operation. The ether w

* The symbol (⌣) indicates "precipitated."

porated until a residue of oily consistence remained, which was nd to be a mixture of two bodies, omicholine and omicholic acid. ey were separated as follows—

Separation of Omicholine, C, a, from Omicholic Acid C, b.

The oily resinous residue was treated warm with a large bulk of centrated watery solution of ammonia. One part dissolved and ained dissolved on cooling, *omicholic acid*,—another part remained dubble, *omicholine*. The latter represented a liquid resin of strong ell, and appeared to possess most of the qualities of the substance ned *urerythrine*.

Further testing of Omicholic Acid, C, b.

To the ammoniacal solution barium chloride was added, with the view producing an omicholate. An insignificant precipitate only was ained, insufficient for analysis. The filtrate was rather dark coloured, wing that the barium had precipitated but little matter. The main k of the omicholic acid seemed to be precipitated by hydrochloric d in light-brown flakes ; but it was changed in its properties to the ent of being less soluble in ether and alcohol than before.

b.) Extraction by boiling Ether, and Examination of Products.

The boiling ether seemed to extract more of the two bodies, which e separated as above. To the ammoniacal solution of omicholic acid, , barium chloride was added, and the precipitate filtered off. It was hed with water until the filtrates were free from barium. The pre- ate on the filter was next repeatedly washed with alcohol, when it found that a quantity of uncombined omicholine had been left on filter. During the precipitation of a barium compound, therefore, choline and omicholic acid had been precipitated from the ammoniacal tion. The salt, which remained insoluble in alcohol, was analysed.

0·2369 grm. yielded 0·0715 Ba SO_4, equal to 17·74 % Ba. The lue contained a trace of iron, which was corrected in the following ysis:—

0·1953 grm. yielded 0·0569 Ba SO_4 equal to 17·13 % Ba.

his barium compound therefore was shown to be an admixture of omicholic acid, and not to contain any of this acid. As was proved e fully, omicholic acid does not combine with barium. It is there- a sign of the purity of omicholic acid that its ammonia solution does give a precipitate with barium chloride. Again, Ba Cl_2 is a means urifying the ammoniacal solution of omicholic acid, particularly of which has been obtained by means of cold ether, from another .

nicholine C, a, and omicholine C, b, were united, washed with pure r, and again dissolved in ether. They will in the following be gnated as *omicholine C, a.*

ie ammoniacal solution to which Ba Cl_2 had been added, omicholic C, a, and omicholic acid C, b, were united and treated with hydro- ic acid. A flaky precipitate fell down, which was washed, and in ollowing will be designated as *omicholic acid C, b.*

With these preparations the respective preparations from D. I. w united, because both had been obtained from the extract of urine by mere addition of sulphuric acid without any boiling.

Elementary Composition of Omicholine C, a.

1. 0·3063 gms. dried at 85, (contained like all preparations omicholic acid and omicholine in little boats of glass shaped for the p pose,) were burned in lead chromate, and gave 0·7859 $\mathfrak{C}\mathfrak{O}_2$ 0·2962 $H_2\,\mathfrak{O}$ equal to 69·97 °/₀ $\mathfrak{C}$ and 10·74 °/₀ H. (The water c tained a vestige of copper oxyde dust.)

2. 0·2863 gave 0·7275 $\mathfrak{C}\mathfrak{O}_2$ and 0·2458 $H_2\,\mathfrak{O}$ equal to 69·31 °/ and 9·54 °/₀ H.

3. 0·3193 gave 0·0746 $\mathfrak{P}\mathfrak{t}$ equal to 3·31 °/₀ N.

4. 0·2602 gave 0·0746 $\mathfrak{P}\mathfrak{t}$ equal to 4·06 °/₀ N.

Mean in 100.	Quotient by At. W.	Quot. by N = 1.
$\mathfrak{C}$ 69·64	5·8033	22·
H 10·14	10·1400	38·5
N 3·68	0·2628	1·
$\mathfrak{O}$ 16·54	1·0337	3·9

Leading to formula $\mathfrak{C}_{22}\ H_{38}\ N\ \mathfrak{O}_4$.

Elementary Composition of Omicholic Acid C, b.

Was brittle at 85° C., fused at 95°. Dried during 48 hrs. at 85°.

1. 0·1656 gms. burned with lead chromate and oxygen g 0·3836 $\mathfrak{C}\mathfrak{O}_2$ and 0·1130 $H_2\,\mathfrak{O}$ equal to 63·17 °/₀ $\mathfrak{C}$ and 7·58 °/₀ H

2. 0·2450 gms. burned with soda-lime, &c., gave 0·0845 gms. equal to 4·89°/₀ N.

In 100.	Quot. by At. W.	Quot. by N.
$\mathfrak{C}$ 63·17	5·264	15·08
H 7·58	7·580	21·71
N 4·89	0·349	1·
$\mathfrak{O}$ 24·36	1·522	4·36

Formula $\mathfrak{C}_{15}\ H_{21}\ N\ \mathfrak{O}_4$.

Omicholine and Omicholic Acid D.

The ether extracts of preparation C. II. and D. II., D. III., D. I were united and treated together, as they had been obtained after boil of the extract of urine with sulphuric acid. The residue was purifi and the substances separated as above described.

Elementary Analyses of Omicholine D, a.

1. 0·2770 burned with lead chromate gave 0·6732 $\mathfrak{C}\mathfrak{O}_2$ 0·2030 $H_2\,\mathfrak{O}$ equal to 66·20 °/₀ $\mathfrak{C}$ and 8·14 °/₀ H.

2. 0·2043 burned with soda-lime, &c., gave 0·0536 $\mathfrak{P}\mathfrak{t}$ equal 3·72 °/₀ N.

3. 0·1004 grm. gave 0·2240 Pt = 3·39 °/₀ N.

In 100.	Quot. by At. W.	Quot. by N = 1.
C 66·20	5·516	21·80
H 8·14	8·140	32·17
N 3·55	0·253	1·
O 22·11	1·384	5·47

Formula = C_{22} H_{32} N O_5.

Elementary Analyses of Omicholic Acid D, b.

Of all the resins obtained this was the most liquid. Dried at 85° until constant—

1. 0·2534 burned with lead chromate, lastly with oxygen, gave 0·6050 CO_2 and 0·1865 H_2O equal to 65·11 °/₀ C and 8·17 °/₀ H.

2. 0·3062 burned as (1) gave 0·7261 CO_2 and 0·2344 H_2O, equal to 64·67 °/₀ C and 8·50 °/₀ H.

3. 0·2386 burned with soda-lime, &c., yielded 0·0856 Pt, equal to 5·08 °/₀ N.

4. 0·2644 burned do. gave 0·0979 Pt = 5·22 °/₀ N.

Mean in 100 parts.	Quot. by At W.	Quot. by N.
C 64·89	5·4075	14·70
H 8·335	8·3350	22·66
N 5·15	0·3678	1·00
O 21·63	1·3518	3·67

Formula C_{15} H_{23} N O_3.

Synopsis of Formulæ of Omicholine and Omicholic Acid according to preparations.

B, *a.*	C_{24} H_{44} N O_6
B, *b.*	C_{16} H_{24} N O_4
C, *a.*	C_{22} H_{38} N O_4
C, *b.*	C_{15} H_{21} N O_4
D, *a.*	C_{22} H_{32} N O_5
D, *b.*	C_{15} H_{23} N O_3

Synopsis and Mean of Formulæ of Omicholine.

B, *a.*	C_{24} H_{44} N O_6
C, *a.*	C_{22} H_{38} N O_4
D, *a.*	C_{22} H_{32} N O_5
Mean formula of omicholine	C_{22} H_{38} N O_5

Synopsis and Mean of Formulæ of Omicholic Acid.

B, *b.*	C_{16} H_{24} N O_4
C, *b.*	C_{15} H_{21} N O_4
D, *b.*	C_{15} H_{23} N O_3
Mean formula of omicholic acid	C_{15} H_{22} N O_4

These bodies are evidently well-defined different entities, although they have not yet been obtained in a pure state. They differ from each other, but cannot yet perhaps be absolutely separated from each other. On the other hand, they have so many properties in common, that the one may possibly be derived from the other, or that both may have a common origin. They are both obtained by boiling the watery solution of isolated urochrome with acid, and are therefore probably derivates of urochrome. Their molecular weight has not yet been determined, as no compound appeared definite enough for that purpose.

Remarks.

Importance in kidney diseases.

The importance of these bodies in pathology may be inferred from the fact that they are capable of forming in the human body in certain forms of kidney disease. The breath and the exhalation of the skin in such cases smell strongly of omicholine and omicholic acid. Their nauseous and emetic properties, already observed by Proust, may perhaps contribute to the explanation of that peculiar vomiting which occurs in cases of chronic kidney disease, in which dropsy and œdema have naturally, or by the constant use of the Turkish bath, ceased to be factors of the pathic process.

As it will, perhaps, be many years before (if ever) I can resume this research, and carry it to that completion which I strongly feel it wants, but which the time and materials at my command did not permit me to give it, I must hope that others will supply the desired information. They should extract the materials from several thousand gallons of urine in order to obtain quantity sufficient for all purposes. The quantity of omicholine and omicholic acid which can be obtained from lesser quantities of urine is indeed not small; but of the mixed resins obtained so much is lost in the various processes of purification, that what remains is the lesser portion, and insufficient for that varied analysation and testing which uncrystallisable and uncombinable substances more than any others require.

F.—*Uropittine.*

Synopsis of Preparations of Uropittine.

A. I.	Three elementary analyses. Uropittine perhaps a stage between urochrome and uromelanine.
A. II.	
	Meta-uropittine. Urorubine.
A. III.	From putrid urine. In store.
B. I.	
B. II.	
B. III.	
C. I.	Six preparations obtained, three from each, used and analysed as in special list.
C. II.	
D. I.	
D. II.	
D. III.	
D. IV.	Hypothetical silver-uropittate, from supposed uromelanine.

Uropittine, A. I. and A. II.

The uropittine described in the Hastings Prize Essay had yielded on analysis the

Mean in 100 parts.	Quot. by At. W.	Quot. by N = 1.
C 55·25	4·604	5·32
H 5·57	5·570	6·44
N 12·10	0·864	1·
O 27·08	1·687	1·952

If the latter quotients are multiplied by 7, the number of nitrogen atoms in uromelanine, we obtain uropittine = C_{37} H_{45} N_7 O_{11}. From

is formula that of uromelanine could easily be derived by assuming at uropittine takes up two atoms of oxygen, and loses one molecule carbonic anhydride and one molecule of water.

$$\underbrace{C_{37}\,H_{45}\,N_7\,O_{11}}_{\text{Uropittine.}} + \underbrace{2O}_{\text{Oxygen.}} = \underbrace{C_{36}\,H_{43}\,N_7\,O_{10}}_{\text{Uromelanine.}} + \underbrace{CO_2}_{\text{Carbonic acid.}} + \underbrace{H_2\,O}_{\text{Water.}}$$

n that case the atomic weight of uropittine would be 763.

It is unquestionable that the urochrome, as well during the chemo-tic, as more particularly during the physiolytic process of decompo-tion, absorbs oxygen. During the operations accompanying the paration of uromelanine, much matter, soluble in alcohol and having ne properties of uropittine, is gradually transformed into uromelanine. The above process may therefore express more than a speculative ormula.

Meta-uropittine from Spec. A.

This body resembles uropittine in composition, but differs by being asily soluble in alcohol. It does not fuse in heat. After extraction of natters soluble in ether alcohol easily dissolved this matter. It was recipitated by water, washed and dried at 100° C. It was much less n quantity than urorubine, to be described below.

Analyses: 1. 0·3335 grm. burned in lead chromate gave CO_2 = ·6554 or 53·59 °/₀ C and H_2O = 0·1947 or 6·48 °/₀ H.

2. 0·2645 grm. gave CO_2 = 0·5376 or 55·43 °/₀ C and H_2O = ·1566 or 6·57 °/₀ H

Mean of analyses.	Uropittine A. I. and II.
C 54·51	55·67
H 6·52	5·15

The substance therefore contains more hydrogen than the preparation rom A. I. and II. by its side. Possibly it may be a substance which is et before uropittine or urorubine in its transformation towards urome-anine. Its existence and empirical composition are here noted in order hat future researches may refer to it and decide whether it is a transition roduct or a mixture.

Urorubine from Spec. A.

It had been separated from the uropittine described and analysed in the Hastings Prize Essay. It was easily soluble in cold absolute alcohol, and stood for three months in it to deposit body less soluble (Uropittine). It had then been precipitated by water, filtered and dried in vacuo. It was very hygroscopic, and after drying at 100°, when it did not fuse, always gained from two to three milligrammes under the dryer. After three days of labour the last weighing was assumed as practically correct.

Analyses: 1. 0·2448 grm. burned in chromate gave CO_2 = 0·5808 or 64·70 °/₀ C and H_2O = 0·1515 or 6·87 °/₀ H.

Deducting from the substance 0·0028 grm. of weight, which if it was not oxygen might possibly have been adventitious water, we get urorubine = 0·2420; CO_2 = 0·5808 or 65·45 °/₀ C and H_2O = 0·1487 or 6·82 °/₀ H.

2. 0·2035 burned with chromate gave CO_2 = 0·4852 or 65·02 °/₀ C and H_2O = 0·1266 or 6·91 °/₀ H.

3. 0·3082 burned with soda-lime gave 0·2492 grm. Pt equal to 11·46 °/₀ N.

It is preferable not to assign a formula to this body at present. It contains more carbon than either uromelanine or uropittine, and could be considered as a body less oxydised than either of these two, and standing nearer to urochrome. It contains more than double the amount of nitrogen which is contained in omicholine or omicholic acid.

Hypothetical Silver-Uropittate from D. IV.—An ammoniacal extract from uromelanine D. IV. by evaporation and resolution in water was precipitated with silver nitrate, boiled, filtered, and washed with water. Washings were almost colourless, and free from silver. Dried in steam-closet, afterwards in air-bath at 110°,

(1.) 0·1501 burned left 0·0487, or 32·44 °/₀ Ag.
(2.) 0·1046 do. do. 0·0336, or 32·28 °/₀ Ag.

Thereupon another preparation was made in exactly the same manner, and yielded,

(3.) 0·1326 grm. left 0·0426, or 32·12 °/₀ Ag.

The salt was therefore surmised not to be a uromelanate, but to stand nearer to the uropittates with 38·71 (C, α, 3), and 35·49 °/₀ of Ag.

I look upon these and like analyses as merely tentative. When the same process applied to the same preparation yields the same compound, this constitutes a symptom in favour of the supposition that the compound is definite, *i.e.*, in atomic proportions. By producing a great many such compounds under varying conditions, those which conform to atomic laws are easily found out by their repetition. If instances remain isolated their accidental and non-specific nature is proved. I consider this proceeding the only one which in the present state of our knowledge of these matters can be applied for the obtaining of the precise information which is so urgently required.

Further Treatment of the mixed Resins C.

(*C.*) *Extraction with Alcohol.*

Cold alcohol extract.

The mixed resins, after having been exhausted, first with cold ether, then with boiling ether, were treated with cold alcohol, and the dark solution was filtered. The filtrate (sol. α) after having stood some time had formed a deposit, and was therefore again filtered. A dark brown powder (designated as uropittine, specimen α, 1) remained on the filter.

Precipitate by ether.

The mother liquor (sol. α) was mixed with ether. It deposited a quantity of flaky light brown matter which after resolution in alcohol gave two specimens, which were designated specimens α, 2, and α, 3.

Hot alcohol extract.

The residue, which had been insoluble in cold alcohol, was now boiled with alcohol and filtered hot on steam funnel (solut. β) No deposit formed on cooling, but on first concentration a deposit, specimen β, 1, formed. On second concentration it deposited specimen β, 2. The mother liquor was evaporated to a syrup and mixed with five volumes of ether. It deposited a flaky light brown matter, β, 3.

Insoluble residue. Uromelanine.

After countless alcohol extractions there remained an insoluble residue (it imparted a colour to boiling alcohol, but the quantity dissolved was imponderable). It was dissolved in ammonia, precipitated by H_2SO_4, washed with water, treated with alcohol, dissolved in ammonia, and evaporated to dryness. By its properties, and the analy-

a silver salt of it, it was found to be mainly *uromelanine*. For the atery extract of the dry residue (of which the greater part remained dissolved in the water, as is usual with uromelanine) on being treated ith silver nitrate, boiled, filtered, and washed, gave the following results analysis. Dried at 110°.

1. 0·1476 grm. left 0·0198 grm. or 13·41 °/₀ of Ag.
2. 0·1550 grm. left 0·0212 grm. or 13·67 °/₀ Ag.
3. 0·3458 grm. burned with soda-lime left 0·2662 Pt, equal to 10·91 °/₀ N.

Neutral silver uromelanine, C_{36} H_{40} Ag N_7 O_9 requires 13·13 °/₀ Ag. nd yielded in the mean 13·47, which is almost the same as the fore- oing mean 13·54 °/₀ Ag. Nitrogen required, if one H_2O leaves ne salt 11·92, found formerly 12·47. If no water leaves the neutral lver salt, it requires 11·66 °/₀ N.

Uropittine; Specimen C, α 1.

The substance was dissolved in ammonia and the alkaline solution reated with Ba Cl_2. Precipitate washed and dried at 110° C. Ba salt.

0·1204 gave 0·0414 Ba SO_4, equal to 20·21 °/₀ Ba.

Note.—A quantity of omicholic acid (Specimen B) in ammonia was reated with Ba Cl_2. After treatment like the precipitate from C, b, a ompound was obtained, of which dried at 95° Note. Similar Ba salt obtained from omicholic acid.

0·3664 gave 0·1069 grm. Ba CO_3 equal to 20·28 °/₀ Ba.

This would therefore amount to a proof that omicholic acid, when it ields a precipitate with barium salts, contains uropittine. By the ompound C, b, α, this proof was not definitely afforded.

It was also essayed to prepare a Ba salt from a neutral solution, ut the quantity ultimately obtained was too small for analysis.

Uropittine Silver from Specimen C, α, 1.

Uropittine (C, α, 1) dissolved in concentrated ammonia was evaporated o dryness. Of the residue a small part only dissolved in water, the reater part remained undissolved. Silver-nitrate was added and the ixture boiled. The precipitate was washed on the filter until the ltrates were free from silver and colourless. Ag salt, 21·39 °/₀ Ag.

1. 0·2412 grm. left 0·0510 grm. or 21·14 °/₀ Ag.
2. 0·1118 grm. left 0·0242 grm. or 21·64 °/₀ Ag.

Mean. 21·39 °/₀ Ag.

3. 0·1194 grm. burned in soda-lime, &c., gave 0·1033 Pt equal to 12·27 °/₀ N.

Bearing with Ammonia of Specimen C, α, 1.

The uropittine was dissolved in ammonia, the solution evaporated to omplete dryness, and the salt redissolved in water. To the solution (a art remained undissolved) hydrochloric acid was added, whereby the ropittine was precipitated. The latter was collected, washed, and ried at 100° upon a weighed filter.

Dry uropittine = 0·1003 grm.

The acid filtrate yielded chloride of ammonium, which by the usual treatment left 0·081 grm. of Pt. This yields upon 100 uropittine 13·90 parts of ammonia, or in 100 parts of compound 87·8 uropittine and 11·20 °/₀ ammonia.

This is more than a molecule of ammonia for even a small formula of uropittine. Indeed as only a part retains ammonia, another becomes insoluble, the instability of the compound is proved. But it is interesting that even in a solution so treated there may be more than a quantity of ammonia necessary to produce a neutral salt. It must, however, not be forgotten that the quantities of material employed were very small.

Uropittine C, α, 2.

This substance was precipitated by ether from the solution in absolute alcohol of the mixed urinary resins. It was dried at 100°, and did not become soft.

1. 0·1596 grm. burned in lead chromate, ultimately in oxygen, yielded 0·3529 CO_2 and 0·0904 H_2O, equal to 60·30 °/₀ C, and 6·29 °/₀ H.

2. 0·2215 grm. burned in lead chromate without the employment of oxygen gave 0·4865 CO_2 and 0·1405 H_2O, equal to 59·90 °/₀ C and 7·04 °/₀ H.

3. 0·2346 grm. burned with soda-lime, &c., gave 0·1727 Pt, equal to 10·44 °/₀ N.

4. 0·2789 grm. burned, &c., gave 0·2066 grm. Pt, equal to 10·50 °/₀ N.

Synopsis of Analyses.

	1.	2.	3.	4.	Mean.
C	60·30	59·90	„	„	60·10
H	6·29	7·04	„	„	6·66
N	„	„	10·44	10·50	10·47
O	„	„	„	„	22·77
					100·00

Uropittine Silver.

From Prep. C, α, 3 (boiled preparation).

The specimen of uropittine used for the preparation of this salt was precipitated by ether from an alcoholic solution of mixed urinary resins. It was dissolved in ammonia. To the solution some more uropittine was added in order to ensure its neutrality; thereupon it was precipitated by silver nitrate. After having been boiled, a proceeding which was necessary to cause the immensely voluminous precipitate to contract, it was collected on a filter. It appeared of a dark grey colour, while the mother liquor was slightly yellow. The washing liquors were of a darker colour than the mother liquor, and fluoresced strongly. Dried at 110°,

1. 0·2115 left 0·0818 grm. of Ag., or 38·67 °/₀.
2. 0·1837 left 0·0712 grm. or 38·75 °/₀.

Mean of these analyses is 38·71 °/₀.

: leads to 279 as the atomic weight of the salt, and 172 as the atomic ght of the organic residue (Ag. = 108). This is very near to the ecular weight of hippuric acid ($C_9 H_9 NO_3$) = 179; but it is not ceivable that this acid should be precipitated by ether, and be in- ble in water, except after having undergone great and peculiar rations.

0·3241 grm. burned with lead chromate gave 0·4340 CO_2 and 164 H_2O, equal to 36·52 % C and 3·99 % H.

0·2919 burned with soda-line, &c., left 0·1430 grm. Pt, equal to 4 % N.

Synopsis of Analyses.

	1.	2.	3.	4.	Mean.
C	„	„	36·52	„	36·52
H	„	„	3·99	„	3·99
Ag	38·67	38·75	„	„	38·71
N	„	„	„	6·94	6·94
O	„	„	„	„	13·84
					100·00

Uropittine Silver. Second preparation from C, α, 3.
(Not boiled.)

ropittine obtained by ether from alcoholic solution of mixed resins, purified by solution in ammonia and subsequent precipitation by rochloric acid, was again dissolved in a few drops of ammonia, and solution made as neutral as possible by digesting it with an undis- ed excess of uropittine. The filtered solution was precipitated by r nitrate, and the precipitated silver-uropittate was collected on a and washed. The mother liquor and the filtrates were colourless. precipitate was dried at 110° C.

Uropittine silver. Not boiled.

0·2150 grm. left 0·0770 grm. or 35·81 % Ag.
0·2402 grm. left 0·0845 grm. or 35·17 % Ag.
ean of these analyses 35·49 % Ag. leading to 304 as the Mol. W. ie salt, and 197 as M. W. of uropittine.

0·3144 burned with lead chromate left 0·4375 CO_2 and 0·1216 , equal to 37·95 % C and 4·29 % H.

0·2708 burned with soda-lime, &c., left 0·1260 Pt, equal to % N.

0·2345 gave 0·1058 Pt, or 6·39 % N.

Synopsis of Analyses.

	1.	2.	3.	4.	5.	Mean.
C	—	„	37·95	„	„	37·95
H	—	„	4·29	„	„	4·29
Ag.	35·81	35·17	„	„	„	35·49
N	„	„	„	6·59	6·39	6·49
O	„	„	„	„	„	15·78
						100·00

ie preceding shows that the former preparation was probably de- osed (oxydised) by the boiling of the precipitate. This effect is

well known to occur in many silver-salts. It washazar ded in th instance because it had been found that the uromelanine-silver salts bo boiling without changing in composition.

Uropittine Barium, from C, α, 3.

Uropittine Barium.

It was attempted to produce a barium salt. The uropittine w obtained by precipitation with ether from an alcoholic solution of mix urinary resins. It was dissolved in ammonia, and barium chloride add to the slightly ammoniacal solution. The mother liquor after filtrati was dark coloured, but the washing water became constantly lighte until it appeared only slightly yellowish at last. Although 0·5 grm. uropittine had been dissolved, only 0·1605 grm. of barium salt we obtained.

Only analysis: 0·1605 grm. gave 0·0194 grm. Ba SO_4, equal 7·10 % Ba.

Uropittine-barium is therefore not insoluble in water. Howev 7·10 is near 7·20 % Ba, which was found in dibarytic penta-urom nine ($\tilde{U}r_5 Ba_2$). Possibly, therefore, the uropittine might have o tained thus much of uromelanine (still soluble in alcohol). It however, evident that from such extremely needy data no opinion c properly be formed.

Uropittine, Specimen C, β, 1.

Ca salt.

It was attempted to produce a neutral solution of this body evaporation of its ammonia solution. By addition of Ca Cl_2 was p duced:

Uropittine Calcium.

Analyses: 1. 0·2069 grm. gave 0·0128 Ca SO_4 equal to 1·81 %

„ 2. 0·1944 grm. gave 0·0116 Ca SO_4 equal to 1·75 %
Mean 1·78 % Ca.

„ 3. 0·1840 grm. yielded 0·1578 grm. Pt, equal to 12
% N.

If uropittine had a composition and atomic weight close to tha uromelanine, this compound might be considered as containing 3 1 Ca. This compound would require 13·13 % of N. But if ur tine have a smaller molecular weight, the figures found for Ca lea no acceptable formula. They show no parallelism to the Ba above described. A zinc salt 3 Ür : 1 Zn. is amongst the compo observed.

Uropittine, Specimen C, β, 2.

Ba salt from alkaline solution.

It was dissolved in a slight excess of ammonia, Ba Cl_2 added, dried at 110°.

0·2560 gave 0·0948 Ba SO_4, equal to 21·77 % Ba.

Ba salt from neutral solution.

A solution of uropittine in ammonia was evaporated to dryness, the residue treated with water. A part dissolved an another rema insoluble. To the solution Ba Cl_2 was added, which produced a precipitate. This was collected on the filter and washed until

. were free from Ba. The last filtrates were slightly coloured
from Ba. The bulky precipitate shrivelled to an insignificant
during drying in the steam oven, and could not be separated
e paper sufficiently clean to be analysed.

Silver Compound of this preparation.

as dissolved in ammonia and the solution evaporated to dryness, residue only a small part dissolved in water, the rest remained le. Silver-nitrate was added and the mixture boiled. The pre- was washed upon the filter until the filtrates were colourless e from silver. Dried at 110° C. Ag. compound, 27·14 °/₀ Ag.

1. 0·1628 grm. left 0·0442 grm. or 27·14 °/₀ Ag.

me Silver Compound obtained from another pure specimen of Uropittine, C, β, 3.

uropittine had been precipitated by ether from an alcohol n. It was dissolved in ammonia, evaporated, and precipitated er-nitrate. The washed precipitate, which had not been heated, ied in vacuo over sulphuric acid, light being carefully excluded. ned a glistening, blackish, violet brown mass. Same Ag. compound.

0·346 grm. left 0·0937 grm. or 27·0 °/₀ Ag.

esearches on the Derivates of Hematocrystalline, the Colouring Matter of Blood, continued.—On Hematine, continued.

quantity of blood containing the colouring matter, which had recipitated by alcohol, was mixed with carbonate of potash, and rds digested on a steam bath with a large proportion of alcohol. red alkaline solution was obtained. To this an alcoholic solu- tartaric acid was gradually added, until the red precipitate thrown down redissolved to a certain extent. Thus the colour- tter was separated from the albuminous matters; the former dissolved, the latter stained brown remained as a precipitate le in the acid fluid. The liquid, which now consisted of an acid n of hematine and some impurities, was evaporated at a tempe- not exceeding 75° C. to about one-tenth of its bulk. A minute y of black crystals of microscopic dimensions separated on the cooling, together with some fatty matters and small crystals of erine. Various proceedings were adopted to purify the substance, y failed to give the results required. Mode of obtaining from alcoholic blood-cake by tartaric acid.

he blood-cake was then pounded with oxalic acid, and the mix- gested with alcohol. *b*, by oxalic acid.

was also extracted by means of alcohol and a little sulphuric *c*, by sulphuric acid.

proceedings *b* and *c* gave materials which were too impure to t further treatment.

Three gallons of blood were treated with seven times their bulk, gallons of a cold solution of potash carbonate, containing one weight of the salt in two parts of water. A thickish soup-like e resulted, which was filtered on square pieces of calico extended frame. The filtrate was not nearly colourless. The precipitate d up in the calico filters and pressed, gently at first, and more *d*, by potash, tartaric acid, and alcohol.

tightly afterwards, until all the liquid was pressed out as muc possible. The compressed cakes were then treated with alcohol, and carbonate of potash solution which separated on standing was po off. The residue was then again well pressed, and now formed sistent cakes. These were crumbled and dried at the ordinary te rature by standing spread out in flat basins. This material was triturated with warm absolute alcohol, and then digested with a quantity of the same at a temperature not exceeding 40° C. solution was filtered off and then treated with an absolute alcohol tion of tartaric acid. The potash was thus precipitated and the li tine remained dissolved. Enough acid was added to cause the li to show a decidedly acid reaction when the litmus paper first di into the alcohol was moistened with water. After about a third o bulk of the liquid had been evaporated below 40° C, all the hem was deposited on cooling in very minute bluish-black crystals. further evaporation not much more hematine was gained, and little deposited was exceedingly impure, resembling a brown matter. This matter was soluble in alcohol, insoluble in water, attacked by nitric acid and yielded a colourless solution.

Hematine crystals.

The hematine crystals were rhombic plates. They grouped t selves frequently with their edges upwards, so as to resemble cluste needles. They were filtered off on a very close paper filter, wa with water and absolute alcohol. The microscope revealed the pre of slight traces of foreign matters, which it was determined to re by recrystallisation.

H.—*Intermittent Hæmaturia, s. Hematinuria, s. Cruenturesis.*

Intermittent cruenturesis.

There is a rare form of disease, which has been described number of observers, but more particularly by Dr. E. H. Gree in a learned and instructive article in Edinb. Med. Journ., May He says that in all the cases which he has seen of this disea attacks have been excited by the same cause, have taken the form, exhibited the same general group of symptoms, and ru same definite course. The immediate exciting cause of the attack been invariably some definite exposure to cold or wet. The form by the attacks has been invariably that of paroxysms; these c on suddenly, almost immediately after the chill was experience passing off rapidly when the effects of the chill had been counte and the patient had become thoroughly warm. The general gr symptoms has been invariably the same, the additional ones occas exhibited being apparently due to an unusual degree of constitu disturbance. In every instance the paroxysms have begun wit ness of the extremities, followed by general chilliness, amounting severer attacks to rigors. In like manner, in every case, the chi or shivering has been attended by a feeling of weight and pain loins, and by pain or a sense of weakness or stiffness in the lower The chilliness has been usually, though not always, followed imperfectly marked febrile hot stage. The patients have inv passed, during the paroxysms, urine looking as if it were mixe blood, and identical in general character. And lastly, the same course has been run by the paroxysms in every case. From half a to two hours after the chilliness or rigors the patient has never f pass the first dark-coloured urine, which has always been highl minous, and has contained numerous crystals of oxalate of lim more or less of brownish or yellowish red, amorphous granular

w hyaline casts, but only occasionally some stray blood cor-

At each succeeding micturition after the chilliness, the urine ariably shown more or less diminution of colour, of albumen, of of lime, and of its other abnormal constituents; resuming its character and appearance by the second or third micturition ight attacks, and usually by the fourth or fifth after severer sms. By the second day after an attack the patients, as a rule, gained their ordinary degree of health and strength, and have d well until some fresh exposure has brought on a new attack of mplaint. Most of the patients suffering from this disease have same pale, sallow, cachectic aspect, two of them having been ly jaundiced, and the others having all had at times an icteroid kin.

it appears that intermittent hematuria is a definite disease, due in s to the same remote constitutional cause. The only medical nt which appears to have any effect in diminishing the liability r from the paroxysms on every exposure, is treatment directed, the intervals, towards the improvement of the general health and ngthening of the patient's constitution. Once the paroxysms t in, the most simple means of restoring warmth are all that it is le to use. The short duration of the paroxysms, the very general of blood corpuscles from the urine, even at the time of the ms, and the complete recovery of the normal character of the ithin a few hours after their subsidence, seem to show that n be no cause of hæmorrhage in the kidneys themselves, but hat the disintegrated blood traverses through the walls of the sels in the Malpighian bodies. For this reason Dr. Greenhow the kidneys rather as the organs of elimination than as the seat isease, and considers the renal irritation, the existence of which ested by the pain in the loins and by the presence of the casts, asionally also of stray blood corpuscles in the urine, to be a ry affection consequent upon congestion of the kidneys produced sudden and unusual strain thrown upon them. Possibly the ms may consist in the sudden disintegration of an unusually antity of blood corpuscles, setting free so considerable an amount to-globuline that it cannot undergo the normal changes, but is ed through the kidneys in a comparatively unaltered state.

gst the English medical authors who have related cases of tent or paroxysmal hematuria, are, besides Dr. Greenhow, Sir Watson, Dr. Elliotson, Dr. Prout, and more recently Dr. G. Dr. Dickinson, and Dr. Gull. Several of these authors have ed the disease to be of malarious origin, and there is no doubt some of the cases published the patients had also suffered from But on the other hand, not one of Dr. Greenhow's patients had from ague, and some of them at least had never visited a mala- strict. The same absence of malarious influence has been noted Pavy and Dr. Murchison in cases published by them in the gical Transactions. The disease in fact merely resembles ague termittent form, and in its commencement with rigors, which are , however, by only an imperfect hot stage and rarely by a g stage. It differs from ague in not being periodical, and in g, apparently, a fresh exposure to cold or damp to excite each paroxysm. The history of most of the cases seems clearly to the existence, in all the patients, of some sort of dyscrasia, upon he external chill acts only as the immediate exciting cause aroxysm. Many patients suffer from so-called rheumatic pains

during the paroxysms. Some patients suffered from such pains times, but this was probably due to secondary syphilis with whic were afflicted at the same time. No post-mortem examinatio ever been made of any case.

Spectroscopical and chemical examination of the urine.

Spectroscopical and Chemical Examination of the Urine.— urine, which had been kindly forwarded to me by Dr. Greenho about an ounce and a half in quantity, of a brownish red colo turbid by a brownish red precipitate. This was filtered off, a testing shown to be hematine in the same state as the hematine wh precipitated by acetic acid from a watery solution of blood on sta

The filtrate was now more red than brown, clear, and port wi in transmitted light. In a layer of $1\frac{3}{4}$ centimetres in thickness spectrum—

1. 39 to 49 = 10 ; int. 8 ; R. α.

Greenish yellow interval.

2. 56 to 65 = 9 ; int. 10 ; R. β.

Cut off at 68. The interval from 65 to 68 is shaded to intens. appears reddish.

In a layer of one centimetre in thickness the following spectru developed :—

1. 40 to 46 = 6 ; int. 4 ; R. α.
2. 57 „ 64 = 7 ; „ 3 ; „ β.
3. 72 „ 82 = 10 ; „ 5 ; „ γ.

Cut off from 87 ; though continuation seems to be illuminated.

Diluted + 1 water, 1 ctr. thick.

1. 41 to 47 = 6 ; int. 3 ; R. α.
2. 58 „ 64 = 6 ; „ 2 ; „ β.
3. 72 „ 82 = 10 ; „ 3 ; „ γ.
4. 88 „ 110 = 22 ; „ 5 ; „ δ.

Violet blue cut off at 141.

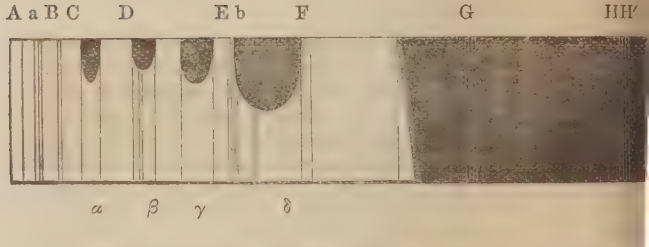
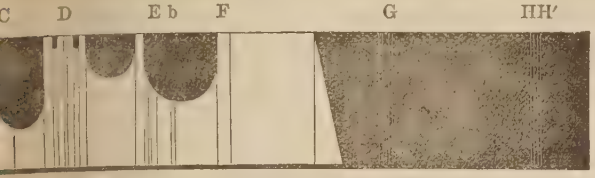


Diagram of Spectrum of Urine in Intermittent Hematuri

At first sight this spectrum offered a remarkable similarity to cruentine described in the Appendix to the 10th Report. It was, h clear from chemical reaction that cruentine could not be prese boiling of the urine the entire amount of colouring matter wa lated, and from the coagulum alcohol and sulphuric acid e hematine only. This pointed to hemato-crystalline, with the s of which the bands β and γ nearly coincided.

bands α and β then appeared to coincide with two of the bands matine in acid solution. By measurement this was found to be the case.



gram of Spectrum of Acid five-banded Hematine in Alcohol.

urine was now treated with a reducing solution of sulphate of de of iron in tartrate of ammonia with excess of this alkali, when ur bands immediately disappeared, and one broad band was present ir place.

1. 55 to 82 = 27. Int. 6.
Rest very dark. Cut off at 110.

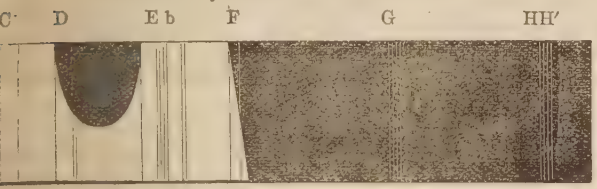


Diagram of Spectrum of Urine treated by reducing Fluid.

violent shaking with air the broad band disappears, and the former do not reappear. The fluid is extremely turbid, and there ns even on dilution with water a very faint continuous spectrum ut any bands. Nevertheless it is clear that the reaction of reduc- ndicates the presence of hematocrystalline as well as of hematine, omparison of the spectra of these substances in the reduced state he spectrum just given will show.

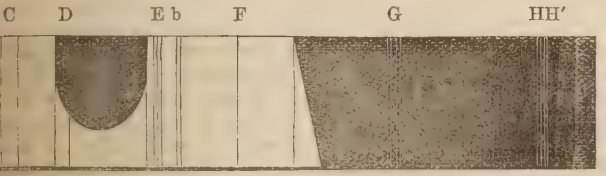


Diagram of Spectrum of reduced Hematocrystalline.

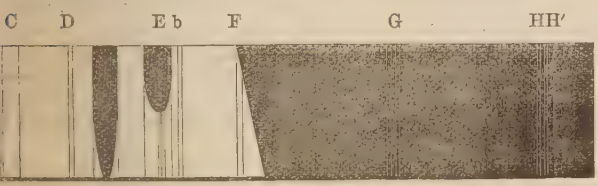


Diagram of Spectrum of reduced Hematine.

will be seen from these spectra that the bands of reduced hematine ematocrystalline necessarily coincide, so that the separation of the

bands of reduced hematine cannot appear, just as in the original spectr of the urine the bands 2 and 3 of four-band hematine, or the ba 2, 3, and 4 of five-band hematine, coincide with the two bands of hema crystalline. All facts therefore show that hematocrystalline and hemat in about equal proportions are present in the urine in question, and only anomaly, which may perhaps yet be explained by the compl character of the fluid, is that on shaking with air of the reduced flu although the one band disappeared, none of the original bands re peared. Somehow or other the substance had been changed by t operation.

The urine was extremely acid, and the excess of acidity seemed be due to a volatile organic acid, probably *acetic*. On standing the ur gradually deposited a flocculent brown precipitate of hematine, and bands of hematine in the spectrum became "pari passu" much pal while the fluid became redder. The same bearing was observed i mixture of watery blood with a little acetic acid. During my researc on cholera I also once observed an extract from muscle present same spectrum as the above urine, but not having powerful light at command I was unable to follow the observation in all its details. T extract from muscle also contained some acetic acid, and on compari of the spectrum then observed and measured I have no doubt that it w due to the presence of a mixture of hematine and hematocrystall (myochrome).

Conclusions.

These observations lead to the following conclusions :—

1. The urine in so-called paroxysmal hematuria contains hematocr talline and hematine in solution. 2. The hematine also occurs a precipitate which increases on standing. 3. There is no proof of presence of dissolved albumen apart from the coagulable hematocr talline (see, however, 5). 4. It is probable that in this disease a sm quantity of blood is somehow or other dissolved, *e.g.*, by bursting o Malpighian glomerulus, and mixing of the blood with effused urin water, or by other means. 5. The hematocrystalline so effused is part transformed into hematine (and some other body, possibly album in a precipitated flocculent form), which for a time remains dissolved the fluid, but is gradually deposited in the insoluble form. 6. T transformation is probably due to the morbid evolution in a certain p of the kidney of a quantity of organic acid, possibly acetic acid, wh dissolves the hematine and imparts to the urine an unusual and v high morbid degree of acidity. 7. The presence of oxalate of lime the urine is no great anomaly, but if it has any significance by be present in large quantity would point in the same direction as presence of acetic acid. 8. Acetic acid by itself is also no anom it being a normal ingredient of urine, as I shall show in an exten research to be published on a future occasion. 9. But its prese in a concentrated form in a certain part of the kidney-tubes, where other urinary constituents, notably urea, were not yet secreted mixed with the hematocrystalline solution, so that it could transf a part of the effused hematocrystalline into hematine, is a great anom and perhaps the essence of the disease. 10. Possibly the acid itsel the cause of the effusion of the blood, of its solution, and partial tr formation.

I believe this to be the first instance in which hematine, hith known as an art-product of the laboratory only, has been proved t present in an organic morbid fluid as the product of the diseased pro itself. The name of "hematinuria" which has been proposed for disease seems to me undesirable, because it would specify only feature of the disease, and would unduly neglect the presence of hen

stalline. Also "hematuria," being applicable to cases in which od appears in corpuscles, does not appear to be a good denomination the new disease. I would suggest "*cruenturesis*" (not cruen- ıresis) as a suitable term; expressing the "*mictus cruentus*" without attempt to define the particular coloured ingredients.

I.—*On Cruentine, continued.*

n the report for 1868, I described a series of new derivates of ıatocrystalline under the name of *cruentine*, and distinguished the eral bodies from each other principally by names derived from their ctral phenomena. All the bodies thus described had been extracted ın the original cruentine sulphate by means of alcohol, and were refore either sulphates, or neutral, or made alkaline after extraction. t their common property was that of being soluble in alcohol. This vent, however, left a large quantity of the original sulphuric acid duct undissolved, even after many extractions at the boiling heat. this insoluble part the following inquiries were directed. It was nd that the boiling alcohol solutions on cooling deposited also this uliar cruentine, which by itself was insoluble in alcohol, even on ling. It is therefore soluble in the boiling alcohol solutions of the l cruentates, but not in the cold.

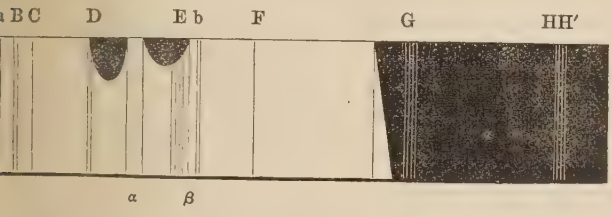
Two-banded Cruentine.—The substance left insoluble by the alcohol s a gelatinous light-red matter, of great volume, as was ascertained a drying experiment. It was soluble in sodium carbonate, and wed a spectrum of two bands— Two-banded cruentine.

1. 60 to 74 = 14; int. 4; R. α.
2. 78 „ 92 = 14; „ 3; „ β.

ıen precipitated from this solution, and treated with an excess of lrochloric acid in much water, a red solution is obtained, which can liluted to any extent without depositing the cruentine. This has ctrum—

1. 60 to 72 = 12; int. 3; R. α.
2. 77 „ 92 = 15; „ 2; „ β.

e to 153, where spectrum is cut off.



gram of Spectrum of Two-banded Cruentine in Hydrochloric Acid and Water.

This body has therefore intrinsically the same spectrum in alkaline in acid solution, while all the other varieties of cruentine hitherto erved, as also hematine, change their spectra greatly when passing of the alkaline into the acid state, or vice versâ.

Effect of reducing Agents.—By the addition of ammoniacal tartrat of iron suboxyde sulphate the band β is much weakened, and all bu disappears, but the band α is not much influenced, particularly n change in its position effected.

Effect of reducing agents.

Reactions of Hydrochlorate of Two-banded Cruentine.—The cruentin was dissolved in sodium carbonate, and filtered; it was then precipi tated by hydrochloric acid, washed by decantation and redissolved i water acidulated with hydrochloric acid. It was allowed to stand, whe a slight turbidity of fat rose to the top, and another portion subsided it was then filtered, and the solution in sodium carbonate and dilut acid was repeated until the substance was steady and uniform.

Reactions of hydrochlorate of two-band cruentine.

Platinum tetrachloride produced a precipitate in the solution, whic contracted on boiling and remained insoluble in boiling alcohol. *Th precipitate had the spectrum of two bands just like the original solu tion.* The filtered mother liquor had no spectrum. The deposits fro the second, third, and fourth boiling alcohol extract of cruentin sulphate were purified as above, and combined with platinum fo analysis.

$\mathrm{Pt\,Cl_4}$.

Analyses.—1. 0·4305 grm. dried at 120° to 130°, on burning lef 0·046 grm. residue, from which hydrochloric acid extracted 0·002 grm iron oxyde. Pt = 0·044 or 10·22 %.

2. 0·6625 of same preparation, left 0·075 residue, from which hydro chloric acid extracted 0·0055 grm. iron oxyde, Pt = 0·0695 grm., o 10·49 %.

The mean 10·35 Pt leads, if the small quantity of iron, amountin to less than 1 %, be neglected, to an atomic weight of 784. From nucleus of this magnitude the molecular weight of uromelanine, 73 might easily be derived.

$\mathrm{Hg\,Cl_2}$.

Mercury perchloride gave no precipitate even on boiling; the band remained, and appeared remarkably like the blood spectrum. (It wi be seen below that the solution by boiling for some time acquired th property of being completely precipitated by this salt.)

$\mathrm{Cd\,Cl_2}$.

Cadmium chloride gave no precipitate, and the bands remained.

Cu acetate. Na and Zn acetate.

Copper acetate gave a precipitate containing all the cruentine; but a sodium acetate and zinc acetate also produce the complete precipitatio of the cruentine, it is probable that acetates only act by displacing th solvent HCl, the free acetic acid being incapable of retaining the crue tine in solution.

$\mathrm{Fe_2\,Cl_6}$.

Iron perchloride produces no precipitate, but intensifies the colo greatly, making it yellowish red.

$\mathrm{NH_3}$.

Ammonia makes the pink solution dark red, and greatly intensifies th absorption of the spectral bands. In this ammoniacal solution—

$\mathrm{Ca\,Cl_2}$. $\mathrm{Ba\,Cl_2}$.

Ca Cl_2 and Ba Cl_2 produce precipitates on boiling, which are light red colour, *and both show the two-band spectrum when expos suspended in the fluid before the slit of the spectroscope.*

The barium compound was analysed:

(1.) 0·373 grm. left 0·0221 of residue, being barium-sulphate, and ir and copper oxyde, or 3·46 %. Of this 0·0170 was the amount of t latter oxydes, leaving $\mathrm{BaSO_4}$ = 0·0051, consequently it contain less than 1 %, namely, only 0·8 % of Ba.

(2.) 0·6088 grm. left 0·0378 residue after treatment with H_2S = 3·64 %. Of this 0·0302 was iron and copper oxyde, leaving o

0076 $BaSO_4$, equal to 0·73 °/₀Ba. Mean of Ba found = 0·765 °/₀. is would lead to an atomic weight of 17908, which seems quite possible. It is therefore clear that the Ba compound of two-banded ruentine decomposed during the washing with boiling water, to which preparation, on account of its enormous bulk, had been subjected. ashing with cold water was found to be quite impracticable. The pper was derived from a copper still in which the alcoholic extraction d been made. The iron is a residue of that contained in the hemato-ystalline.

A second preparation, washed once by filtration, lastly by repeated cantation, being too gelatinous to admit of washing on the filter, ve—

(1.) 1·6616 grm. (became heavier during heating to 120°) left 0992 residue.

(2.) 1·2136 left 0·0696 grm. residue. When the copper was dis-vered the analysis was not followed out any further.

Dissolved in caustic potash and alcohol, with a little sodium carbonate KHO. led, and allowed to stand for a week, two-band cruentine assumes following elegant property. *Itself being red it fluoresces light green;* yields a beautiful light green, of a pure and lively tint, when luenced by the light-cone collected from the sun by a quartz colli-tor. It reminds much of the phenomena of *omicholine* and *omicholic id*. It retains the two bands, but they are more feeble, particularly second band is almost like that obtained by reducing agents. This ectrum reminds also of omicholine.

Effect of protracted boiling upon two-banded Cruentine Hydro-chlorate.—The object of this process was to ascertain whether the iron uld be removed from the cruentine or not. The solution was boiled ree days long. After two days boiling the spectrum of the solution s unchanged, but black matter was continuously deposited. *The id filtrate* from the dark matter on the third day was dark red, and *s completely precipitated by mercury perchloride.* (In a solution of o-band cruentine in HCl sublimate produced a precipitate which solved on boiling. On cooling the solution gelatinized completely. violent shaking the flakes separated and left the liquid colourless. ere is therefore a third variety of cruentine, and of behaviour with ercury perchloride.) The precipitate had a curious dirty grey colour, d no red or brown about it.

Effect of boiling upon cruentine hydrochlorate

Reactions of filtrate $HgCl_2$.

Potassium ferrocyanide produced a copious complete precipitate in the rate, all matter being deposited of a dark dirty greenish colour. The ution contains apparently much free iron, as the fluid above the pre-itate deposits a second *blue* precipitate, Prussian blue. Sulphocyanide ve a red precipitate. Consequently the hydrochloric acid extracts n and a little organic matter, to which sulphocyanide adheres. But insoluble residue contained iron in quantity (also copper, if such l been added to the solution).

Ferrocyanide of potassium.

The hydrochloric acid solutions filtered from the deposit, and all washing waters, were repeatedly evaporated to dryness, and left a ck residue. This dissolved in concentrated H_2SO_4, and with alcohol solution gave spectrum of two-banded cruentine sulphate. The d was very opaque. The water solution with caustic potash gave ctrum of four-banded cruentine. It contained great quantities of n (and the impure specimen alluded to also of copper).

The residue insoluble in HCl.

Cruentine made insoluble by boiling with Hydrochloric Acid.—The cruentine which had become insoluble in hydrochloric acid by boiling was washed with water. It remained insoluble in any kind of hydrochloric acid, concentrated or dilute, insoluble in ammonia, in alcohol, with or without acid or alkali. In its half-dried state it was, however, soluble in concentrated sulphuric acid. A mixture of a drop of this solution with alcohol gave the cruentine sulphate spectrum. The solution after standing 24 hours was poured into much water, and appeared almost completely precipitated. It was twice washed by decantation. The residue or deposit did not dissolve in concentrated or dilute hydrochloric acid, even on boiling, but dissolved easily in alcohol and a little HCl. It did not assume the two-band hydrochlorate spectrum of cruentine, but showed the sulphate spectrum—

1. 52 to 58 = 6
2. 61 „ 77 = 16

[Similarly a decoction with HCl of the precipitate from an alkaline solution of total cruentine (four-banded) which had been boiled during many weeks daily, showed not the two-banded hydrochlorate spectrum, but the sulphate with the narrow and wide band, the same as the foregoing. See measurements below.]

The addition of ammonia to the alcohol solution produced the *four-band cruentine spectrum.* A slight precipitate ensued in the solution which was probably an insoluble modification of the four-banded body.

Alcohol and HCl and dried two-banded cruentine.

Effect of Alcohol and Hydrochloric Acid upon dried Two-banded Cruentine.—The cruentine sulphate as before was boiled with alcohol to exhaustion, until nothing but the light red two-band cruentine, quite insoluble in alcohol on boiling, remained. This was dried and shrunk to a brownish red matter. It was slowly soluble in concentrated sulphuric acid on trituration and standing, and precipitated by water. It was also soluble in ammonia, but was partly deposited from this solution on standing by the evaporation of ammonia. (See *spectrum of deposit, below.*) It dissolved best in hydrochloric acid and alcohol, and the solution had the spectrum of cruentine sulphate.

1. 54 to 59 = 5 ; int. 1 ; R. β
2. 62 „ 79 = 17 ; „ 5 ; „ α

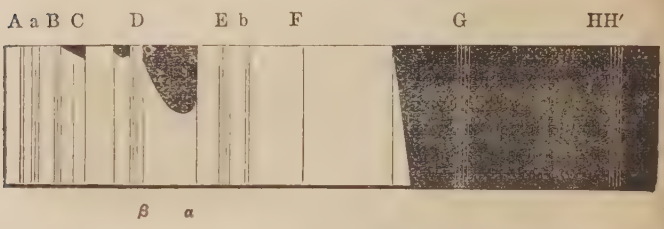


Diagram of the Spectrum of this Hydrochloric Alcohol Solution of Cruentine.

The greatest intensity of α is midway between 68 and 79, end at 142 The red is rather suddenly cut off, as if there was a band from 37 to 44 The foregoing spectrum is therefore identical with that of the hydrochloric product of cruentine described on p. 231 of Report, 1868. But there was this difference, that the solution after addition of ammoni

came *red when concentrated, green when diluted, and changed ectrum.*

1. 50 to 67 = 17; Int. 5; R. α
2. 75 „ 85 = 10; „ 1; „ β

Cut off at 110.

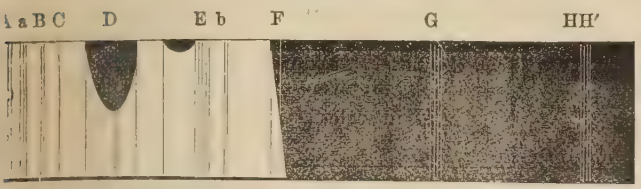


Diagram of Spectrum of Ammonia Solution of foregoing Body.

By reference forward it will be seen that this spectrum though milar to is not identical with the spectrum of two-banded cruentine ydrochlorate in water. When this latter solution is, however, made lkaline with ammonia it shows spectrum—

1. 54 to 68 = 14; Int. 5; R. α
2. 72 „ 84 = 12; „ 2; „ β

Cut off at 112.

Thus it is seen that this spectrum stands midway between the spec- um of acid watery and the ammoniacal alcohol solution.

Deposit from Ammonia Solution of Two-banded Cruentine.—This eposit, which was obtained as above described, was redissolved in con- entrated ammonia. It showed a spectrum of certainly four, possibly ve bands, distributed as follows:

Deposit from ammonia.

Band in red questionable.

1. 54 to 63 = 9; Int. 2; R. γ
2. 69 „ 77 = 8; „ 2; „ β
3. 85 „ 99 = 14; „ 3; „ α
4. 113 „ 127 = 14; „ 1; „ δ

Band No. 4 is in blue to indigo.
Cut off at 143.

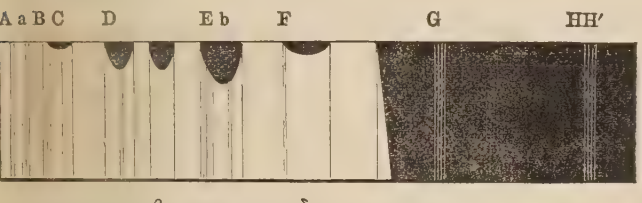


Diagram of Spectrum of Ammonia Solution of Deposit from Ammonia Solution of Two-banded Cruentine.

In case this experience should be repeated the red part of the spec- rum will have to be examined in thicker layers of fluid. The band 4 r δ is quite peculiar to this body, no band having hitherto been found o far in blue with any preparation of cruentine.

Two-banded Cruentine and Sulphuretted Hydrogen.—Cruentine was precipitated by soda from HCl solution and washed. It was then dis-

Two-banded cruentine and hydrothion.

solved in ammonia and the solution treated with hydrothion. It became very black coloured. On continued boiling it deposited all coloured matter together with black granules. Ammonia redissolved only a small portion, which had the same two bands as before. Even concentrated ammonia dissolved very little. Consequently the hydrothion had so far changed the cruentine as to make it insoluble in watery ammonia. The changed cruentine was, however, soluble in ammonia and alcohol, and formed a splendid red solution, which gave spectrum—

1. 63 to 74 = 11; int. 4; greatest on violet side; R = α.
2. 80 „ 93 = 13; „ 2; even „ = β.

Cut off in violet at 150.

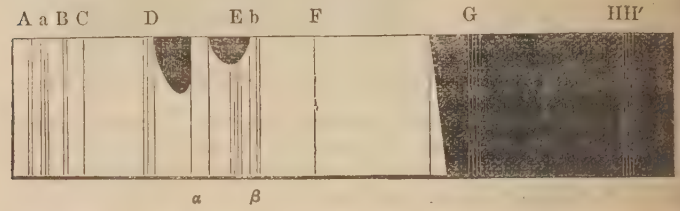


Diagram of Spectrum of Alcohol and Ammonia Solution of Two-banded Cruentine changed by Hydrothion.

On standing the dissolved matter became completely precipitated, and the alcohol almost colourless by loss of NH_3. The addition of a little NH_3 restored perfect solution. But after it had stood for one day the red matter had lost its solubility in alcohol with or without ammonia. Even boiling with these agents extracted only traces of matter, the iron had not been removed by the hydrothion. Concentrated sulphuric acid redissolved the matter and transformed it again into cruentine sulphate. This had the now well-known two bands in alcohol, but its watery solution treated with ammonia gave a precipitate, and after that was filtered off the solution showed spectrum of four-band cruentine.

Concentrated H_2SO_4 and cruentine.

Effect of concentrated Sulphuric Acid upon Cruentine.—Cruentine had been dissolved frequently in concentrated sulphuric acid, it was at last dark brown. By frequent extraction with boiling alcohol of the precipitated and washed matter a soluble portion was extracted. The insoluble portion was dissolved in NH_3, filtered, evaporated to dryness, dried, and burned, and residue determined.

0·374 grm. product from cruentine dried at 125° left 0·019 Fe_2O_3, equal to 3·5 °/₀ Fe.

Alcoholic extract.

The alcoholic extract had a peculiar spectrum:

1. A broad feeble band. 49 to 74 = 25; int. 2; R. α

Blue shaded from 78 to 112, where the spectrum is cut off.

Diagram of the Spectrum of this Alcohol Solution.

The entire spectrum is very shady, though the red solution is quite clear. On dilution the band disappears before the shading in blue, and

spectrum now reaches to 155. Diluted the red solution becomes wn; though still perfectly translucent it fluoresces with a smoky hue liffuse sunlight; in the cone of the collimator it fluoresces strongly *in te with a tinge of greenish brown.* It differs completely from the rescent cruentine formerly described which becomes *red,* and shows phenomena in a much feebler degree. The fluorescent body can in power be compared only to solution of orchil (cudbear). The alcohol , evaporated, the residue dissolved in NH_3, filtered, evaporated, and residue burned. It left red iron oxyde, which was almost insoluble HCl.

Fluorescence.

't was thus shown that cruentine cannot be deprived of iron by itment with concentrated sulphuric acid and precipitation with ter, even if continued so often that only enough material for one lysis is left. I believe that Lehmann never succeeded in obtaining natine quite free from iron by this method, and I have never succded myself. I therefore believe that the statements of Mulder arding hematine free from iron are as fallacious as his ideas regard- proteine free from sulphur. I found even that when copper s or tin salts are mixed with cruentine, these metals follow the entine through all changes, and though a little may be lost at each nge, there is always a quantity remaining in the ultimate cruentine.

Conclusions.

Hematomelanine.—Thus I term the last product of the influence of ohuric acid upon hematocrystalline and cruentine. It is purified by ation in ammonia, evaporation to dryness, and washing with water alcohol. It is a black, shining matter, and burns with fusing and lling, giving out much carbonaceous gas, which burns with ng yellow flame, greatly differing from the burning of uromelanine. eaves a residue of iron oxyde.

Hematomelanine.

Influence of Carbonate of Sodium and boiling upon Cruentine.—The le cruentine was dissolved in sodium carbonate and boiled for two s. After that it showed spectrum—

Influence of sodium carbonate and boiling.

1. in red, feeble, 40 to 51 = 11 ; Int. 1.
2. in yellow, 57 „ 71 = 14 ; „ 3.
3. in green, 76 „ 89 = 13 ; „ 5.

n darkness. More diluted the first band disappeared entirely, and e appeared band

4. 93 to 106 = 133 ; Int. 3.

earlier alcohol extracts formerly described measured in spectrum—

1. 45 to 54 ; Int. 1.
2. 63 „ 75 ; „ 3.
3. 79 „ 92 ; „ 4.
4. 98 „ 115 ; „ 3.

soda had therefore hardly changed the cruentine.

fter having been boiled daily during four weeks the spectral phenoa remained as above. It was precipitated by HCl and washed by utation, during which it began to smell disagreeably, the weather g very hot. Treated with HCl in excess only a small portion of the tance dissolved, yielding apparently the cruentine sulphate spectrum below), not the two-banded hydrochlorate. Like another specimen h, boiled with HCl, smelled of glue and gelatinised, so this smelled poiled glue. The insoluble residue easily dissolved in alcohol, ding four-band spectrum, feebly by itself, more strongly and better ed after addition of NH_3.

he circumstance that the sulphate spectrum was obtained instead of hydrochlorate caused me to examine for sulphuric acid. The solu-

tion was mixed with $BaCl_2$ and HNO_3, and allowed to stand two day when a trace of barium sulphate had deposited. But the spectrum w apparently the same as before, only the first narrow band seemed muc paler.

1. 49 to 58 = 9; Int. 1; R. β.
2. 61 „ 77 = 16; „ 5; „ α. The maximum of intensity is not the middle, but has its axis at 73. Cut off in blue at 154.

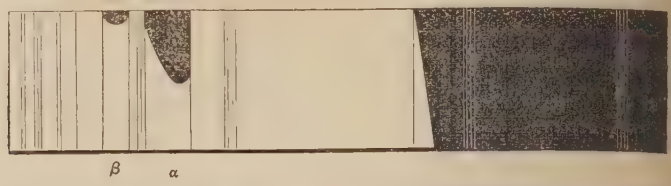


Diagram of this Spectrum of Cruentine Hydrochlorate in Alcohol.

Perhaps there is a shade, a slight indication of a band in green fro 84 to 93. Before the addition of the barium and nitric acid the HC solution measured—

1. 51 to 58 = 7; Int. 1; R. = β.
2. 61 „ 77 = 16; „ 3; „ = α.

Consequently the bands are the same in situation, but changed little in relative intensity, the difference being greatest in the solutio from which H_2SO_4 was removed. *Consequently this body is not sulphate, although its spectrum is almost identical with that of cruentin sulphate.*

Residue. The residue on filter from first HCl decoction was again treated wit HCl, and found soluble in alcohol. It had the same bands as the abov solution, but being more concentrated the whole spectrum was mor obscure. *A special obscuration in red* reached from 34 to 47. Additio of NH_3 produced the four-banded alkaline cruentine.

1. 44 to 48 = 4; Int. 1.
2. 52 „ 68 = 16; „ 3. Greatest or axis intensity of this ban at 64.
3. 71 „ 85 = 14; „ 4.
4. 88 „ 105 = 17; „ 5.

There ensued a precipitate in the solution. After filtration th spectrum was lighter, but the absorption also less intense. It is ther fore possible that both the soluble and insoluble part were four-band cruentine.

Action of soda, &c., upon cruentine. *Action of Soda, Hydrochloric Acid, and Ammonia upon Cruentine.*— The crude or total cruentine was as in the foregoing experiment boiled f weeks with soda, afterwards dissolved in hydrochloric acid and boile the insoluble part was filtered from the solution, and the latter mix with alcohol. This showed most distinctly the band in red which h been surmised to exist in the previous observation.

1. 35 to 46 = 11; Int. 2; R. α.

Shading commences at 51. More diluted there appeared—

2. 60 to 84 = 24; Int. 2.
3. 90 „ 107 = 17; „ 1. (Very difficult to determine.) End at 1 This, therefore, is the second hydrochloric acid product descri

. 232 of Rep. of 1868, but it differs in the intensity of its
ɔption.

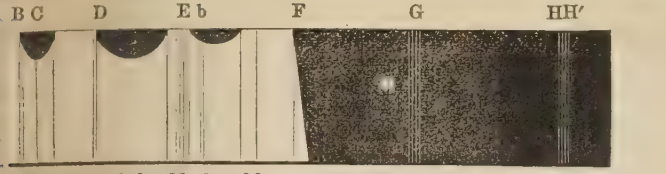
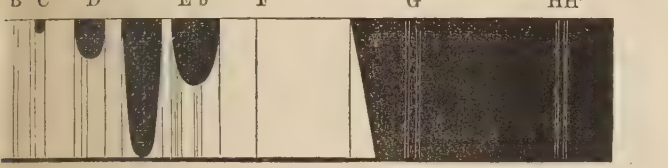


Diagram of the Hydrochlorate of Cruentine described in the foregoing.

reated with excess of ammonia this body assumed the spectrum of lkaline four-band cruentine represented on p. 229 of Rep. 1868, diagram.

1. 44 to 49 = 5 ; Int. 1.
2. 53 „ 69 = 16 ; „ 2.
3. 73 „ 85 = 12 ; „ 3.
4. 89 „ 105 = 16 ; „ 3.



he part which had become precipitated in the HCl solution after lution in soda carbonate, also showed the four-band spectrum. Cruentine and nitric acid.

ruentine and Nitric Acid.—Solid cruentine as it came from the huric acid process, containing yet H_2 SO_4, was dissolved in hot nitric , and heated until no more red vapours were evolved ; it formed a ow thick solution of an aromatic smell. Addition of water precipi- d a yellowish green matter, which became darker by exposure, and nk much during drying. The dried matter was only partially soluble lcohol of 80 °/₀ ; more dissolved on boiling, and was deposited on ing. The alcoholic solution after neutralization with ammonia gave ecipitate with silver nitrate, which became darker on standing.

he precipitate by water was soluble in ammonia, and this solution Precipitate by Ag.
precipitates with Ca Cl_2 and Ba Cl_2, which were yellow, the tion remaining strongly yellow. The acid water from which the es had been precipitated was evaporated to dryness, and again mixed water. Then brown resinous drops were deposited which did not Brown semi-fluid resin.
lify on standing for some days ; consequently several bodies are formed er the influence of nitric acid. (1.) A yellow body soluble in alcohol, ocruentine. (2.) (3.) Two yellow bodies insoluble in alcohol on ing. The mixture was treated with ammonia, which dissolved one ion, namely, the body (2), or nitrocruentic acid, and left (3) nitro- rine. This on boiling with water, and repeated addition of ammonia, lled, but did not dissolve ; on attempted filtration it speedily clogged filter. (4.) Brown resinous drops. (5.) The watery acid solution aining probably oxalic acid and a yellow product. Neutralised baryta water and barium carbonate it yielded a yellow neutral ate, which on evaporation became darker every moment, and ended completely decomposed brown, hard, blistery mass. It had been ted exclusively on the steam-bath, where a higher temperature than to 95° could not be attained.

J.—*A peculiar Reaction of Cod-liver Oil, and a similar Reaction of Fatty Matter from Fibrine of Blood.*

a.) When cod-liver oil is treated with concentrated sulphuric acid immediately yields a purple reaction. The mixture cannot well be dilute with more oil, as in that case it becomes turbid, but on dilution wi concentrated sulphuric acid a beautiful purple liquid is obtained. Th when examined before the spectroscope with Drummond's light, allow red, yellow, and green to pass up to 74. On great dilution with ac the absorption recedes towards violet. When blue begins to appea green is perfectly clear. The acid solution fluoresces green, and o further dilution becomes yellowish brown.

The addition of a trace of sugar to the cod oil greatly intensifies th reaction, and causes it to remain red on dilution with acid, and n to become yellow so quickly as otherwise. This mixture yields th following spectrum :—

Band 73 to 100, when dilute. Intens. 1 ; or 73 to 110, when mo concentrated.

At the end there is a lavender coloured band up to 145, where spe trum ends.

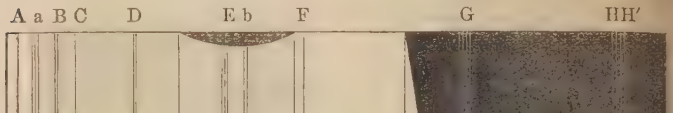


Diagram of Spectrum of Reaction of Cod-liver Oil with Sulphuric Acid and Sugar.

b.) A large quantity of fibrine which had been most carefully wash was dissolved in dilute sulphuric acid. On standing a scum collect on the top, which was washed by repeated decantation, ultimately the filter. Gradually after the last filtrates, when the paper had beco dry and the temperature of the air become high, some *fluid oil* per lated which had the following properties :—It was colourless. Wi sulphuric acid it immediately gave the red test for cerebric acid. Wi sulphuric acid and sugar it gave the purple test, and on standing t days gelatinised in a curious manner and became black. The *alcol extract* from this was red, and showed the following spectrum :—

Red, yellow, and green to 75, then dark to end.

On cautious further dilution a feeble band becomes isolated—

80 to 113 = 33. Intens. 1.

After which there is a beautiful violet band to the end at 146.

Diagram of Spectrum of Reaction of Fibrine Oil with Sulphuric Acid and Sugar, extracted by Alcohol.

More diluted absorption remains, 87 to 113 = 32. Violet gets n blue and extends to 166, when absorption disappears.

a describing the ingredients of the corpora lutea of cows, I gave ar reaction which their juice, obtained by heat, yields with sul- acid and sugar. The mixture became purple, and its spectrum a band in green.

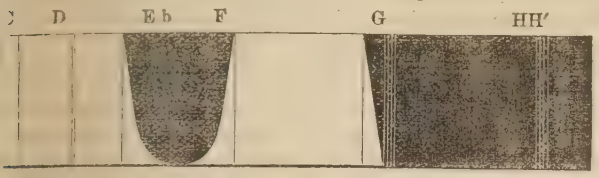


Diagram of Purple Test of Juice of Corpora Lutea.

76 to 113 = 37. Intens. 10. Cut off at 155.

liver oil gave spectrum—

73 to 110 = 37. Intens. 1. End 145.

ine oil gave spectrum—

80 to 113 = 33. Intens. 1. End at 146.

e spectra are so very similar to each other that they may be due nd the same body, which we may assume to be an ingredient of e animal liquids employed. The greatest difference is exhibited spectrum of the juice of the corpora lutea, which has an intensity while the other bodies are much less intense, remaining about 1. ay be due to the circumstance that the juice contains much more ubstance yielding the reaction than the two oils.

spectra which cod oil and fibrine oil yield when treated with ic acid only, without any sugar, give the same continuous ion in blue and violet, and are therefore identical.

olutions show a slightly green fluorescence, those with acid only nspicuously, those with sugar least. From the foregoing we may e following conclusions :—

od-liver oil, fibrine oil, and the juice of corpora lutea contain each iar substance, the particular chemical properties of which are in all three mixtures.

he colour test of these substances is apparently identical with the ich cerebric acid, lecithine, and biliary acids yield with the same s. Spectrum analysis shows, however, that the test of cerebric d lecithine with sulphuric acid alone exhibit absorption bands, ie three matters under examination do not show absorption bands he same circumstances.

ie reaction of biliary acids with sulphuric acid and sugar (Petten- test) yields a spectrum with three bands, one band overlying the (See p. 256 of last Report.) The same reaction with cerebric lds a spectrum with a band in green midway between D and E ; h the substance in the three bodies the same reaction gives a n with a band which reaches from midway between D and E to F, and which is therefore not only moved more towards the violet also much broader.

think it probable that the substance in cod-liver oil is derived e liver-cells, that in fibrine from white blood corpuscles entangled ibrine, and that in the juice of corpora lutea from the peculiar those bodies.

K.—*Chronic Yellow Atrophy of the Liver, or Malignant Jaundice*

Notes of case.

The subject of this disease was a man about 45 years of age, who h gradually become jaundiced. There was no history of gallstones, a the colour of the fæces indicated a diminution only, not a compl arrest, of the excretion of bile. The patient had fever, and w dropsical, the ascites being considerable. The liver on percussion w found much reduced; the fluid in the abdomen, however, made exact determination of its limits difficult. The first urine exami

Characters of urine.

amounted to 200 CC, and was very bilious, yielding the test for bile-ac with sulphuric acid and sugar, for cholophæine with nitric acid, and was supposed, for tyroine with nitrate of mercury containing subnitr It contained a little albumen. It was filtered and precipitated with l acetate, heated, filtered, and washed. The filtrate was evaporated small bulk and treated with alcohol. A precipitate ensued. This filtered off and washed with alcohol, and then extracted with concentra ammonia. It was then boiled with water, which extracted much mat and left a little xanthine undissolved. The solutions gave a wh precipitate with mercury nitrate, and no red colour with nitrite, t showing that tyroine was *not* present.

The solution in water was evaporated and left a colourless am phous residue. This dissolved easily in nitric acid without effervesce or red vapours, and on drying at a gentle heat a purple resi remained, which became bluish-purple with caustic potash. Con trated hydrochloric acid dissolved a portion, and crystals formed evaporation, which did not polarize, consequently were not uric a On boiling in a little water these crystals left again amorphous ma

Xanthine and hypoxanthine.

which became insoluble. We have therefore probably both *xant* and *hypoxanthine* in this water extract. The first residue, insolub water, was certainly xanthine, and the second matter may have hypoxanthine, although the circumstance that it gradually bec insoluble also points towards xanthine; for it is a well-established perty of xanthine to become more and more insoluble in water more frequently it is dissolved in or treated with it.

Volatile aromatic oil.

The reaction which simulated the presence of tyroine was prob due to the volatile aromatic oil present in every urine, and which I first described in the Hastings Prize Essay; but this must cert have been present in great excess before it could give so inten reaction. Thus far, therefore, there were only biliary matter abnormal ingredients; the other isolated bodies were normal.

The urine of the second day of observation was 630 CC, stra yellow; after filtration in bulk greenish brown. The filter rem yellowish red, as if stained by cholophæine. It was precipitated lead acetate, the filtrate treated hot with hydrothion and filtered.

Peculiar crystals.

standing 36 hours it deposited a mass of peculiar filmy cryst needles. They were isolated, the mother liquor further evaporate allowed to stand.

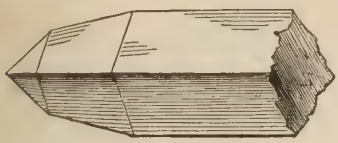
In the same manner the urine of ten consecutive days was tr and the crystals obtained were united. On examination they found to be a particular new form of uric acid, which may be

Para-uric acid.

para-uric acid. This substance is similar to xanthine by its re with nitric acid, and by the behaviour of its nitrate of silver com when dissolved in nitric acid. It is similar to hypoxanthine or s in its crystallised form, solubility in water, and deposition from h water, and in the reaction with nitric acid. But it differs from xanthine in this, that its silver nitrate compound is easily solu nitric acid, and not easily deposited on cooling, while hypoxanthine

s completely deposited. It differs from both xanthine and thine in this, that its watery hot solution, when precipitated by trate, yields a compound, which, when freed from all excess of issolves easily in nitric acid with effervescence, and deposits on cooling. After much evaporation, however, and cooling, it nitrate of silver, thus showing that in the nitric acid solution ate of silver and nitrate of para-uric acid are not combined. ture of nitrate of silver crystals and para-uric acid nitrate, after on in water, yields a copious precipitate with ammonia, which, first, contracts in excess. This is similar to both xanthine and thine. It differs from both in this, that it dissolves in dilute id under evolution of carbonic acid. The solution on evaporation purple residue. Para-uric acid differs from uric acid by its y in water, and greater solubility in hot water, forming a crystal- posit; by its peculiar shape of crystals, which are needles of mbic prisms with complicated ends, being a combination of two octahedra; and by its saturated solution in cold water on addition

chloric acid immediately depositing fine lustrous crystals, which he microscope have this shape. Para-uric acid is, however,



to ordinary uric acid by its insolubility in cold, slight solubility in concentrated hydrochloric acid; by its solubility under evolution

nic acid (and nitrogen?) in dilute nitric acid, and by the purple- l residue of this solution on evaporation to dryness.

ead precipitate after washing was suspended in alcohol and de- d by hydrothion. The filtrate was allowed to evaporate spon- ly. A greenish yellow residue remained, which was entirely n water, and against expectation did not give the nitric acid cholophæine. This substance or its derivate had therefore been hanged during the chemical process for its isolation. Biliary colouring matter.

ts.—The nitrate of mercury test applied to urine directly may tyroine when none is present. The reaction is due to the l oil. The urine in chronic malignant jaundice contains biliary and an anomalous acid of the uric acid group, to which the name uric acid has been given. It does not contain tyroine or leucine, which are often present in the acute form of the disease. Results.

L.—*On a peculiar Reaction of Lecithine from Yelks of Eggs wit Sulphuric Acid, and on primary and secondary Absorption Spectra.*

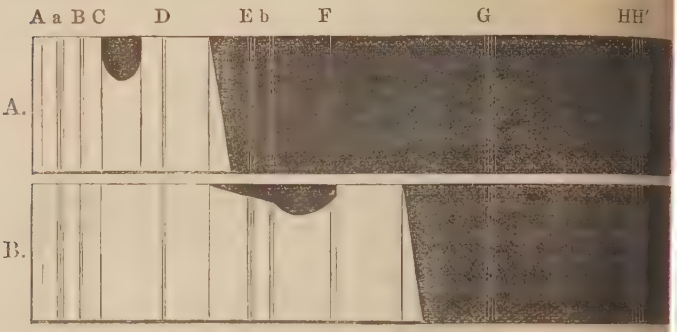
The extract of yelk of egg by chloroform or ether, after evaporation o the solvent, is a semifluid yellow mass, in which on standing fin crystals of lecithine are deposited. When it is shaken with concentrate acetic acid much luteine dissolves, and oily drops remain suspende But none of the substances can at present be perfectly isolated. Treate with concentrated sulphuric acid it gives a blue reaction, due t luteine, which passes into green and then into red ; this becomes dark every moment and shows spectrum :

Band in red and orange 40 to 53 = 13 ; intens. 3 ; R. α. In very dar solution the band reads 42 to 56. Yellow from 59 appears green an shaded to 71, where spectrum is cut off. The solution has a powerfu green fluorescence.

On dilution blue appears at 114, reaching to 139, and in green a ban remains, feeble from 74, becoming intensity 3 at 95, and ending at 114

1. 40 to 53 = 13 ; Intens. 3 ; R. α.
2. 74 „ 114 = 40 ; „ 2 ; „ β.

When 2 can be seen and measured, 1 has quite disappeared. Th first spectrum is therefore the primary (A.), and the last one the seconda (B.) spectrum.



Diagrams of Primary and Secondary Spectrum of Lecithine fro Yelk of Eggs with Sulphuric Acid.

The spectrum A. has already been described and figured on p. 18 the 10th Report of the Medical Officer, but is there erroneously nam as that of vitelline. It is, however, correctly alluded to under proper name in the comparison with the biliary tests on p. 256.

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1. *A new Mode of purifying Leucine.*

study of the chemical and dynamical relations of this substance eat importance, as it is not only a normal ingredient of some f the animal body, but a constant and copious product of the and artificial decomposition of albuminous substances. In gical conditions of the human body it appears in various organs, arly the liver, and then it is also not rarely excreted by the urine. iant jaundice.) The circumstance that it is a homologue of ll, (the normal copula of cholic acid in glycocholic acid of the d of benzoic acid in the hippuric acid of the urine,) invests it eat theoretical interest. Some time ago I undertook an inquiry ne of its transformations, an account of which has been published Journal of the Chemical Society. The production of an acid m nitrogen, and more oxydised than caproic acid, and of many alts, was the principal result of that inquiry. This leucic acid (C_3) was shown to be homologous to lactic acid ($C_3H_6O_3$), as nology of leucine to glycocoll led the inquirer to suppose. But t difficulty in procuring leucine in quantity prevented an extension research over a greater area. This has now been overcome to a xtent by the following new proceeding.

Process.

raw leucine, as obtained by the inspissation and cooling of the liquors of tyroine, freed from mother liquor by pressure and s treated with concentrated nitric acid while being triturated in a and gently heated, until a slight reaction is perceived. The cid solution is then diluted with water, and a solution of nitrate le of mercury is added as long as a precipitate is thereby pro- This is removed by filtration. The filtrate is allowed to stand e days, during which time a reduction of mercury takes place. cess of mercury is then removed by sulphuretted hydrogen. The is neutralized by ammonia and evaporated until a pellicle forms. icine which is separated on cooling is collected on a filter, washed ncentrated alcohol until the filtrate is colourless, and dried. It is ssolved in boiling water, treated with pure animal charcoal, and ; the filtrate is evaporated in a covered china capsule (a Berlin in capsule with wooden handle and spout and china cover is best t purpose) until it is saturated on boiling, (forms a pellicle imme-

diately on the cover being removed,) and then poured into three or fo times its volume of very strong alcohol. White leucine crystallis almost immediately, and on standing. After 24 hours the leucine collected on the filter, washed with alcohol, and dried on blotting pape If it is not perfectly white and brilliant and free from smell, it must dissolved once more in boiling water filtered, and after concentrati poured into alcohol.

Thus purified leucine is a matter of a very light specific gravit owing to the excessive thinness of the scales; it is perfectly white a of great splendour; it can be sublimated in white flakes without leavi any residue; in short all possible chemical tests show it to be perfect pure.

In this manner I have purified leucine obtained from horn; fro human and other hair; from albumen; from fibrine; from the huma liver in several diseases—paralysis and Bright's disease, pyæmia, a tetanus; from the human spleen and kidneys in pyæmia and tetanu and from liver substance which was allowed to putrefy in a vessel fro which air was excluded.

2. *On the Compounds of Leucine and Copper.*

Preliminary remarks.

a. Preliminary Remarks.—It is desirable to possess means by whi leucine can be completely removed or precipitated from solutions in su a manner as not to interfere with their further analysis. When we consid the compounds of leucine hitherto known, it is clear that none of the offers the necessary conditions for the accomplishment of this obje

Leucine and cupric hydroxyde.

The researches of Goessmann (Ann. Chem. 91, 133) had shown th copper oxyde readily combined with leucine, and formed a compound slight solubility. But as for complete precipitation an excess of t oxyde would have to be used, it was to be apprehended that the co per compound obtained must contain an admixture of basic salt, or uncombined oxyde, and could therefore not be analysed directly, b had to be re-formed into a compound of definite proportions. It h been stated by Strecker that leucine displaced the acid of copper aceta and formed an insoluble compound with the metal. To the applicati of this reaction there was the objection that it imported acetic acid i fluids which may contain this or nearly allied acids as essential ing dients. I therefore endeavoured to find a process which should combi all leucine contained in any fluid at once with an invariable quantity copper, without leaving any excess of copper or any other acid in t fluid, and should subsequently yield the leucine copper compound in insoluble form ready for analysis. This was effected by the follow proceeding.

Leucine and cupric acetate.

Mode of obtaining new compound.

b. Mode of obtaining new Copper Compound of Leucine, or Dicup Trileucine.—On adding to a solution of leucine cautiously a conc trated solution of copper sulphate, until caustic potash produce precipitate in a filtered sample of the cold solution, a fluid of a d blue colour is obtained. This is treated with barium carbonate boiled until an excess of this earth does not any longer ca effervescence, and a filtered sample of the solution remains clear w barium chloride and nitric acid. The filtrate, a fluid of a beautiful d blue colour, is free from sulphuric acid, contains a quantity of coppe solution which stands in a certain proportion to the amount of leu present, and on evaporation on the water bath at a gentle heat standing and cooling deposits a light blue mass of crystalline gran The new compound after being washed with water for some time is t washed with alcohol until the washings are colourless, and dried sulphuric acid. It is a pale blue granular mass and becomes sky-

Properties of new product.

ing powdered. It leaves copper oxyde on combustion. When d in a glass tube open at both ends it emits white and alkaline fumes e strong and characteristic odour of amylamine. When the com- d is boiled with water little only dissolves. Its mother liquor orated to dryness, and again treated with water to the extent of the nal solution, deposits a further mass of scales and crusts, which are nearly insoluble in even boiling water. Thus almost the entire int of leucine contained in the fluid is obtained in the form of this uble copper-compound.

nalyses.—Dried in the steam-closet until the weight was constant— Analyses.
0·345 grm. gradually ignited gave 0·1044 grm. of copper oxyde, l to 0·0833 of Cu, or 24·14 °/₀ of copper in the compound.

0·2946 ignited gave 0·091 CuO, equal to 0·0726 Cu, or 24·64 °/₀.

0·5248, burned with soda-lime, gave out ammonia, which com- l with 0·3036 grm. of platinum, &c., and therefore contained 357 grm. of nitrogen, or 8·30 °/₀.

cond Mode of obtaining.—The same compound was obtained by Second mode of obtaining.
ng a solution of leucine with bright copper wire newly reduced in ogen, for some days on the sand bath. The salt was deposited from olution filtered boiling; the solution retained little copper, and ined excess of leucine. The compound was therefore soluble in a ion of leucine, but much less soluble in water. It was insoluble in g acetic acid. The analysis gave the following result:—

0·0785 grm. left 0·0240 CuO, equal to 24·42 °/₀ Cu.

hird Mode of obtaining.—The same compound was obtained by Third mode of obtaining.
ng copper oxyde to a solution of leucine hydrochlorate. This riment will be more fully described lower down.

0·0912 grm. left 0·0270 grm. CuO, equal to 23·64 °/₀ Cu.

ourth Mode of obtaining.—By evaporation of the mother liquor of Fourth mode of obtaining.
cupric dileucine obtained by copper acetate (see lower down).

0·6339 left 0·1840 grm. CuO, equal to 23·17 °/₀ of Cu.

ie compound obtained by the four processes described consists of atoms of leucine, in which four atoms of hydrogen are substituted wo atoms of copper.

s formula is $C_{18}H_{35}Cu_2N_3O_6$. Formula.

s.	At. Weights.	in 100.	Found. a.	b.	c.	d.	Mean.
	216	,,	,,	,,	,,	,,	,,
	35	,,	,,	,,	,,	,,	,,
	126·8	24·58	24·14	24·64		24·42	24·47
	42	8·14	,,	,,	8·30		
	96						
	515·8						

Synopsis of analyses.

compound, therefore, stands midways between the neutral salt $H_{21}CuN_2O_4$, requiring 19·6 °/₀ of Cu and a hypothetical ie monoleucine $C_6H_{11}CuNO_2$, demanding in theory 32·95 °/₀ u.

he mixture of leucine and copper sulphate assumes a deep blue Deep blue colour of leucine and copper sulphate mixture.
ur immediately on the addition of the sulphate. The colour is er than that of the saturated copper sulphate solution, even when a few drops of it are added to a saturated leucine solution, which if

Spectral analysis of blue solution.

they were added to the same bulk of water would be scarcely sufficient impart to it any blue tint whatever. The amido-acid in the sulph therefore increases the colour of the copper salt analogous to ammon The removal of the sulphuric acid and excess of copper oxyde by bari carbonate leaves the solution still darker.

Both solutions examined in the spectroscope absorb one half of red part of the spectrum. The yellow and orange become green, green dark, the blue lighter, but no detached absorption bands are cernible with lamp-light. The salts therefore behave like inorga copper-salts.

(*f.*) *Application of the Method to the Separation of Leucine from Extract of a Liver suspected to contain Leucine.*

Separation of leucine from liver.

The liver was extracted with boiling water, the extract treated w lead acetate, the filtrate freed from lead by hydrothion, and evapora to crystallisation. The mother liquor was separated, the residue trea with spirit, the spirit extract dried, dissolved in water, and satura with copper oxyde by the addition of cupric sulphate and boiling w barium carbonate. A deep blue solution resulted, in which on evapo tion some reduction of copper took place. The insoluble greenish b leucine-copper was separated and washed, dried at 110°, and analyse

(*a.*) 1·4703 grm. burned in platinum crucible left 0·4284 grm. cop oxyde, or 23·26 °/₀ of Cu.

(*b.*) 0·7171 grm. burned in platinum crucible left 0·2077 CuO, 23·12 °/₀ Cu.

(*c.*) 0·6614 grm. burned in china capsule gave 0·1899 CuO, 22·92°/₀ of Cu.

The mean of these analyses is 23·10 °/₀ of Cu, and differs from mean found in the pure preparation by 1·2 °/₀, from theory by 1·4 This difference is, however, unimportant, as the data still support theory, and because the difference is fully accounted for by the sli deoxydation and consequent separation in the form of pulverul suboxyde of copper which a minute portion of the dissolved cop oxyde experienced. In a similar case it would be necessary to al the oxydisable matter to saturate itself with oxygen from copper, then to saturate the leucine, which has been deprived of a portion of copper, a second time with copper oxyde. This may be done in all c where a very pure preparation is desired at once, and a considera loss of leucine by the earlier precipitation of the compound is secondary importance. It is best to employ copper oxyde which been kept under water and become finely pulverulent and reddish bl In some cases a few drops of a solution of copper acetate may be s cient to restore the deoxydised copper.

To impure extracts of organs which contain much undefined disable matter the method is as yet not well applicable. The pro obtained is green and very impure. Nevertheless, from some extr of cholera organs which had been analysed for urea some scales of co leucine could be extracted which admitted of perfect identification.

(*g.*) *Monocupric Dileucine, obtained by means of Copper Aceta*

Leucine copper made by adding copper acetate to a hot solution of leucine.

On adding to a concentrated hot solution of leucine kept on the st bath a quantity of saturated solution of copper acetate, the fluid bec for a moment deep blue, and then immediately deposits a light gra precipitate. This increases by stirring, and the fluid is decolo The continued addition of copper acetate brings the precipitate

ximum, and the fluid then remains of a more saturated blue. Thin les form on the surface. They are decanted with the blue fluid from precipitate, and the latter is placed on a filter. The washings are y faintly blue, lastly almost colourless. To boiling water the pre- ipitate yields a portion of matter (monocupric trileucine and dicupric eucine), which will be considered lower down. Dried at 110° until stant, it is a beautiful sky-blue powder with no particular lustre.

Analyses :—

a.) 0·6353 grm. burned in a china crucible left 0·1490 grm. CuO, ual to 18·72 °/₀ Cu.

b.) 0·6511 grm. left 0·1536 grm. CuO, equal to 18·85 °/₀ Cu.

c.) 0·3492 grm. burned with lead chromate gave 0·5604 CO_2 and 2601 H_2O, equal to 43·77 °/₀ C and 8·27 °/₀ H.

From a comparison of the above analyses with the theory of ydrous monocupric dileucine (atom. weight, 323·4),

Atoms.	Atomic weight.	In 100.	Found.			
			a.	b.	c.	Mean.
C_{12}	144	44·52	„	„	43·77	„
H_{24}	24	7·42	„	„	8·27	„
Cu	63·4	19·60	18·27	18·83	„	18·55

vill be seen that the carbon and hydrogen analyses support the theory he anhydrous compound, containing in theory 2·4 °/₀ C more than the drated, better than that of the hydrated, stated below, while the per meets the requirements of the hydrated salt. But as four erent preparations hereafter to be described support the probability his salt being always hydrated, the above salt may be assumed also contain one atom of water.

The solution from which the foregoing compound had been deposited, evaporation formed scales on its surface which resembled those of upric trileucine as obtained by the barium process. The fluid when wed to cool became turbid. The washed precipitate after extraction h boiling water was analysed. 0·6339 grm. left 0·1840 grm. CuO, al to 23·17 °/₀ Cu, or exactly the mean found in the compound n the liver extract (23·10 °/₀).

) *Hydrated Monocupric Dileucine, obtained by saturating a boiling Solution of Leucine with Cupric Hydroxyde.*

Goessmann (Ann. Chem. 91, 133) obtained a compound of leucine copper, by saturating a solution of the former, while boiling, with drated copper oxyde, and cautiously concentrating the solution on water bath. On cooling a granular crystalline dark blue compound embling oxyde of copper ammonia was deposited. When the solu- n was concentrated quickly the compound was deposited in scales on surface and at the bottom of the fluid. The crystalline deposit and scales were analysed together, and yielded the following numbers. e matter was dried at 100° C. The copper was found so low as to tify the assumption of the compound having been a hydrate. But hydrogen was one per cent. below the theoretical quantity, and as l be seen from a comparison with the theory of the anhydrous salt, s actually 0·7 °/₀ below the theory of this latter. On the other nd, the carbon should have been rather higher, if the compound had n partially dehydrated. I once obtained a compound with a similar

amount of copper (18·62 °/₀), by treating a large quantity of leucin dissolved in weak spirit with some copper oxyde and metallic copper.

Theory of hydrated monocupric dileucine. Atomic weight = 341·4

		In 100.	Goessmann.	Th.	Mean of compo by Cu acetat
C_{12}	144	42·17	41·33	„	43·77
H_{26}	26	7·61	6·69	„	8·27
Cu	63·4	18·56	18·20	18·62	18·55

(*i.*) *Dicupric Trileucine and Monocupric Dileucine obtained from Leucine Hydrochlorate by repeated addition of Copper Oxyde.*

The solution which remained after the mercury of some mercuric leucin had been precipitated by H_2S out of its HCl solution, was evaporate to dryness to chase away all excess of HCl, then redissolved, and whil hot treated with cupric hydroxyde. An insoluble blue compoun (No. 1) immediately formed. Analysis, 0·0912 grm. burned lef 0·0270 grm. of copper oxyde, equal to 23·64 °/₀ Cu.

The solution was evaporated to dryness on the water bath, and yielde a blue compound (No. 2) covered by a thin layer of green. The latter copper chloride, easily dissolved in water with a blue colour, while th blue compound remained undissolved. Dried at 110°. Analysis 0·1986 grm. burned left 0·0452 CuO, equal to 18·17 °/₀ Cu.

The mother liquor or washings of the foregoing compound were heated and treated a second time with copper oxyde; this at first dis solved, but the clear solution began to get turbid and a new quantity o precipitate (No. 3) fell down.

Analysis: 0·1852 grm. left 0·0420 CuO, or 18·11 °/₀ Cu.

The filtrate from this was now saturated with copper oxyde, filtered from the excess, and the blue filtrate evaporated on the water bath. It deposited sky-blue granules (No 4) besides green copper chloride. The latter was removed by washing with water.

Analysis: 0·2318 grm. left 0·0532 CuO, equal to 18·33 °/₀ Cu.

The filtrates were again evaporated, and deposited a salt (No. 5 which was analysed.

Analysis: 0·1067 grm. left 0·0248 grm. CuO, equal to 18·56 °/₀ Cu.

All the precipitates were washed until the washings were free from chlorine. The precipitates were then specially analysed for chlorine but found not to contain any. The copper oxyde thus separated the leucine from the hydrochloric acid, forming at first and only once dicupric trileucine, afterwards under varying conditions four times mono cupric dileucine. In each preparation copper chloride was found an observed to diminish until the last. It is therefore evident that leucin when evaporated with copper chloride in proper proportions drives ou the hydrochloric acid almost as easily as the acetic acid from th acetates of copper and mercury.

Fluorescence of washings of the above solutions.

The latest washings from the above compounds were clear an colourless in transmitted light, even in thick layers. But they fluoresce copper blue in diffuse light, and strongly whitish blue in sunligh Sunlight thrown into the fluid with a lens produced an intense whit blue pencil of fluorescence.

Synopsis of the quantity °/₀ of Cu found in the compounds :—

No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
23·64.	18·17.	18·11.	18·33.	18·56.

The last preparation thus contained exactly the amount of copper quired by the hydrated monocupric dileucine.

(*k.*) *Monocupric Trileucine.*—C_{18} H_{37} CuN_3O_6.—When the first nular precipitate, which is produced by copper acetate in a hot ution of leucine, is after complete washing with cold water boiled in arge quantity of water, a small quantity of two compounds dissolves, which the one is deposited from the filtrate on cooling in light rstalline clouds; the other remains in solution. Under the microscope deposit appears as rosettes of scales, belonging to the rhombic tem apparently. But the angles of the scales are very uncertain. ashed and dried they form an exceedingly light mass, of the peculiar tre of leucine itself, having also its fatty feel, but in addition a splendid t light sky-blue colour. The masses are so highly electric that they here to paper or a knife like needles to a magnet.

Analysis: 0·1515 grm. on combustion left 0·0273 CuO, equal to ·38 °/₀ Cu.

Theory of monocupric trileucine :—

		Calc. in 100.	Found.
C_{18}	216	,,	,,
H_{37}	37	,,	,,
Cu	63·4	13·95	14·38
N_3	42		
O_6	96		
	454·4		

The mother liquor from which the foregoing compound had been posited measured 358 C.C., had a faint blue colour, and on evaporation dryness left a quantity of salt, which dried at 110° C. weighed 1012 grm. On combustion it left 0·0283 grm. CuO, equal to ·29 °/₀ Cu. and was therefore dicupric trileucine.

A precipitate was therefore formed by the copper acetate in the cine solution, which consisted mainly of *monocupric dileucine*. From s boiling water extracted *monocupric trileucine*, which was deposited cooling of the water, and *dicupric trileucine*, which was left pure er the evaporation of the fluid. It is possible that the latter two lies were originally formed and mixed with the first compound. It y, however, also be supposed that monocupric dileucine is decom- sable by boiling at a certain period after its formation, and in small antity, and that three atoms of it break up according to the following mula :—

(L = leucine.)

$$\left\{\begin{matrix}L\,L\\Cu\end{matrix}\right\}\quad\left\{\begin{matrix}L\,L\\Cu\end{matrix}\right\}\quad\left\{\begin{matrix}L\,L\\Cu\end{matrix}\right\} = \left\{\begin{matrix}L\,L\,L\\Cu\end{matrix}\right\} + \left\{\begin{matrix}L\,L\,L\\CuCu\end{matrix}\right\}$$

3 atoms monocupric dileucine.	1 atom monocupric trileucine.	1 atom dicupric trileucine.
Cu = 18·56 °/₀.	Cu = 13·95 °/₀	Cu = 24·58 °/₀

3. *On a new Compound of Leucine and Mercury, Pentamercuric Hexaleucine.*

The neutral compound $C_{12}H_{24}HgN_2O_4$ is made by dissolving h a quantity of freshly precipitated mercury oxyde in a hot solution

of leucine, that on cooling a turbidity ensues in the fluid. This solution on evaporation deposits the above salt. But when it was attempted to obtain this compound by acetate, as in the analogous case of the copper-compound, a new salt was obtained.

To a hot solution of leucine a concentrated neutral solution of mercury acetate was given, and the mixture heated gently. A white granular precipitate ensued, which was separated by the filter from the hot fluid. (First precipitate.) The mother liquor was evaporated by steam to a concentrated state, when much acetic acid escaped, but no deposit ensued. The addition of water produced an immediate white, slightly pink precipitate. The acid compound was evidently decomposed by water. The precipitate was filtered off and washed. (Second precipitate.) The washing water made the filtrates again turbid.

First Precipitate, or Pentamercuric Hexaleucine.—The precipitate was washed, then suspended in hot water, boiled, filtered, and again washed. The filtrate contained a mercurial leucine compound. The precipitate was a slightly yellowish heavy powder. It was dried at 110° C.

Analysis : 4·2527 grm. were dissolved in dilute hydrochloric acid. A small quantity of yellowish impurity was removed by filtration, and the filter washed to exhaustion. The application of hydrothion yielded 2·8167 grm. of mercury sulphide, equal to 57·09 °/₀ Hg. This leads to $C_{36}H_{69}Hg_5N_6O_{12}$, as the formula of this compound, being *pentamercuric hexaleucine.*

Hg	Hg	Hg	Hg	Hg
L L	L	L	L	L
Atoms.	At. Wt. in 100.		Found.	
36 C	432	,,	,,	
69 H	69	,,	,,	
5 Hg	1000	57·94	57·09	
6 N	84			
12 O	192			
	1777			

The *second precipitate*, after treatment like the first, did not appear to differ in composition or properties.

4. *Leucine-lead.* $C_{12}H_{12}Pb N_2O_4$.—The neutral compound was obtained by Strecker by adding to a boiling mixture of leucine and lead acetate cautiously a little ammonia. When I took a solution of leucine, saturated boiling, added lead acetate and a little ammonia, only a trifling precipitate ensued while the fluid was boiling ; but on cooling, the whole fluid filled with this very insoluble compound of lead and leucine

I.—*On a Series of New Yellow Substances contained in Animals and Plants.**

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Introduction.

Introduction

The following researches arose in an endeavour to define chemically spectrologically the substance which passes in works on morbid tomy and chemistry under the name of "hematoidine." In this leavour the author was completely disappointed, as during the mination of more than 1,200 different specimens of healthy or morbid ues "hematoidine" was never once met with. The author does not, refore, assume that hematoidine, as originally described by Virchow, s not exist. He believes, however, that several matters have oneously been termed hematoidine, which were either cholophaine luteine. Neither of these last two bodies have any apparent rela- or similarity to hematoidine, or to any of the numerous derivates the colouring matter of the blood which have been described in the th Report of the Medical Officer. Luteine in particular offered perties so peculiar, that it was specially investigated, and there was nd such a wide distribution of it, or of bodies very closely resembling that the subject was followed out as far as time and opportunity mitted. The whole of the new substances met with were, according their spectra, and with regard to their origin and occurrence, ided into 10 classes. Of these only one class, namely, yellow stances with continued absorptions, have hitherto (as far as author's acquaintance with literature reaches) been known to nce; the spectra (and most of the bodies to which they belong)

* An abstract of these researches was communicated to the Royal Society by the ical Officer, and was published on p. 253 et seq. of No. 108, vol. 17, of the ceedings of that Society. An abstract also appeared in the Centralblatt für die dizinischen Wissenschaften, January 1869.

of the other nine classes are here described for the first time. These researches show that specific absorption-phenomena are not, as has hitherto been believed, confined to the red, yellow, and green part of the spectrum, but occur, if not in the same variety, yet with the same or perhaps greater frequency in the blue, indigo, and violet part of the spectra, particularly of substances which present to the naked eye a yellow or orange colour.

The animal series of these substances claims particular consideration, on account of the important physiological and pathological questions which they concern: questions, for instance, as to the homologies of parts of the ovum, and as to the chemistry of the blood serum, and as to intestinal digestion, and as to the pathology of ovarian tumors, and generally as to cell-growth and secretion.

The spectroscopical observations were made with the methods and instruments which are described and figured by the author in previous reports, and which, for readiness and precision, he can strongly recommend to the attention of spectroscopical inquirers. To the author, at least, the spectroscope has become one of the most indispensable aids of inquiry in the laboratory. The diagnoses which it is capable of establishing between bodies of similar colours, or between bodies which by chemical reaction assume or yield similar colours, are striking and certain, and cannot be furnished so readily by any other mode of inquiry.

a.

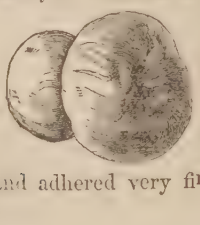
On Ovario-luteine, the characteristic Yellow Ingredient of the Corpora Lutea of Mammals.

Corpora from ovaries.

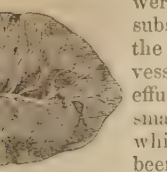
The ovaries of cows and heifers were dissected, and corpora lutea from the size of a large filbert to that of a lentil removed. The large corpora had all what may be called a cap or a projection protruding over the round surface of the ovary. The larger they were the lighter was their colour. The large ones were yellow to orange, the small ones became red like cinnabar. Some came easily out of the tissue of the ovary, being attached only loosely by connective tissue; scraping rather than cutting was required to isolate them. Some contained a cavity filled with a clear yellow fluid. In one instance I removed this fluid with a pipette, and found it to measure about 3 cubic centimetres. A few minutes after its removal from the cavity it became firmly coagulated. The corpus was of equal thickness all round, the inner surface pale, white, and smooth, with many threads extended from wall to wall. There was no aperture in the corpus, which therefore represented a complete cyst. Other corpora came out of the ovaries with no less ease; but they were smaller and more solid to the touch, and contained a small cavity of the size of a pea, filled with yellowish coagulating fluid. The greater number of corpora, however, contained no cavity, but were quite solid, and in the place where a cavity might have been, and in my opinion was at an earlier stage of their growth they showed stripes and streaks of white fibrous tissue. These corpora rarely had any protuberance. Smaller corpora were of darker colour and adhered very firmly to the tissue of the ovary, drawing its sur

'avity of corpus filled with fibrinous fluid.

Solid corpora.



Small corpora.



wards after the fashion of an umbilicus. The smallest corpora were dark red, and frequently quite buried in the substance of the ovary. The corpora, particularly the large ones, were surrounded by many blood-vessels, but in none of them was there ever seen effused blood, or coagulated blood, even to the smallest extent, or any residue or appearance which could have led to the belief that there had been at one time an effusion into its cavity, or near to

phery. No crystals of any kind, particularly no so-called No blood or
line crystals, were ever met with. Microscopically the corpora crystals found.

lutea, while fresh and large, consisted of many Microscope
large bodies, so-called cells, with a nucleus each, shows
and a great quantity of feebly-coloured *granular* nucleated
matter in the material surrounding the nucleus. bodies.
This granular matter became darker as the cells grew older, and shrank, until at last in very dark-red corpora the granular bodies were dark, strongly defined, and impenetrable to light, as if all
except the coloured ingredient had been extracted from the body Dark old
and the outer membrane, if any such was there, had been con- bodies.
around the pigment.

mber of the corpora were pounded and put into a steam-oven in Pulp of corpora
They drew a considerable amount of juice, which was turbid draws a juice
dish, and was poured off. It gave a precipitate with nitric acid, on heating.
ink at first became greenish yellow. It gave a precipitate, then Reactions of
n with sulphuric acid, which became reddish brown on standing. this juice.
lphuric acid and sugar it became beautifully purple, like the fat Purple test.
od corpuscles or cod liver oil, or cerebric acid. Its spectrum
a band in green:

76 to 113 = 37, int. 10, cut off at 155.

Diagram of Purple Test of Juice of Corpora.

diluted with sulphuric acid the spectrum is: band 80 to
26, int. 4, cut off at 160. Blue splendid. Both observations
ith Drummond's light. When this purple solution was poured
ohol it either lost its colour when little in quantity, or when a Diagnosis from
mount was taken gave to the alcohol a smoky hue. The peculiar bile acids.
m distinguishes this reaction from that of bile acids and cerebric
Hydrochloric acid gave no reaction in the watery juice, even on
. The juice itself seemed colourless, as on filtration, which was
fficult, only a few drops of nearly colourless fluid passed. The
of the turbid juice is therefore probably due to suspended
s, but the reaction seems to be due to both particles and fluid.
solid part of the corpora, when dry, was powdered and extracted Extraction of
iling alcohol of 85 per cent. by volume. A deep yellow solution dry corpora
tained, which was filtered on the steam-funnel, and immediately lutea with
alcohol.

became turbid. Subsequent extracts being added, the solution ultima remained clear. The yellow solution before the spectroscope passed yellow, and green, until 85, where spectrum was decidedly cut Diluted with one-third of its volume of the same alcohol it exhibited bands, one in blue and one in indigo.

Spectral analysis of alcohol extract.

Measurements of spectrum.

Obs. (*a.*) (1.) 110 to 123 = 13 Int. 2.
(2.) 134 „ 152 = 18 „ 1.
Obs. (*b.*) (1.) 107 „ 120 = 13
(2.) 128 „ 149 = 21

Possible third feeble band in violet, at about 170. End at 195.

After repeated clarification of the solution, and with the aid Drummond's light, the following final observation was made:—

Obs. (*c.*) (1.) 106 to 122
(2.) 130 „ 150
(3.) 165 „ 179
End at 198.

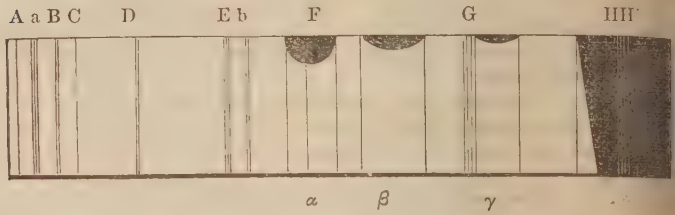


Diagram of Spectrum of Alcohol Extract of Corpora Lutea of Co

Turbidity by water.

The addition of a little water or of any watery reagent to the satur alcohol solution caused a turbidity which did not dissolve on heat The potash mixture alone became clear and formed a yellow dep Platinum tetrachloride, gold terchloride, and mercury perchloride duced no reaction, even on boiling. Neutral mercury nitrate cause

Reactions with mercury nitrate and acetate.

copious yellow precipitate, which on heating immediately, slower standing, became snowy white. Mercury acetate produced a cop canary-yellow precipitate, which on boiling contracted, and left fluid colourless.

Reactions with acetates of copper, zinc, and lead.

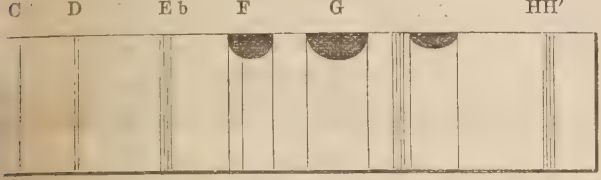
Copper acetate produced a copious green precipitate, which bec thicker on boiling, but the fluid remained turbid for days. The acet of zinc and lead apparently produced no reaction at first, even on boil but on standing some days the mixture deposited all yellow matte an oil at the bottom of the alcoholic solution. A solution of io in ammonium iodide produced no reaction.

Chloroform solution of luteine. Spectrum.

Chloroform extracted the yellow matter both from the fresh corpora and from the dry powder. The solution left the spectrum to 85, when the blue was cut off. On continued dilution blue appe but there remained an absorption band, 93 to 110 = 17, int. 2, with gas-light. Drummond's light gave same measurement. On cautious dilution a second absorption band, 119 to 136 = 17, i R. β, could be observed; spectrum cut off at 175. Other readin medium concentrated solution:—

(1.) 90 to 100 = 20.
(2.) 116 „ 137 = 21.
Cut off at 189.

pared to the spectrum of the alcoholic solution, the bands of the orm solution were moved from 12 to 16 points of the scale s the red end, and the third band was not certainly visible.
ether solution, on the other hand, of which spectrum is here ed, resembles the alcohol solution, its second and third bands noved a little more towards the violet end.



chloroform solution evaporated before the bellows left a , which was white at first, ultimately yellow. This residue drop of nitric acid became blue for a moment, then colourless. hloroform solution with nitric acid became colourless at once it any blue appearing. The very peculiar odour of luteine which ed most strongly during the evaporation of the chloroform, led me much of the odour of cancer juice. The yellow residue t dissolve easily in cold alcohol, but required heating. By con- ted sulphuric acid it was coloured of a dirty green, which at the n in the thinnest layers appeared blue. When a little sugar was to the solution no purple appeared, from which it became pro- that the reaction of the juice above described belongs to a matter ing luteine.

Reactions of luteine with nitric and sulphuric acid

Odour like cancer juice.

en the alcohol solution is left to spontaneous evaporation, a semi- fat-like matter remains, in which on standing crystals are ted, while the fat loses nearly all its colour. The crystals are red in transmitted light. They can but imperfectly be isolated the semi-fluid fat in the following manner :—The mixture is edly shaken with absolute alcohol, in which the fat dissolves to a extent, while the crystals are almost insoluble in it. What ns after decantation of the alcohol is repeatedly shaken with portions of ether. The rest of the fatty matter now dissolves, he crystals remain free, although deadened in appearance and led by the ether, which dissolves a portion of their substance. rystals are washed on a filter with a little ether, pressed between , and dried.

Crystals of luteine.

e crystals are soluble in chloroform with a yellow, in a concentrated fiery orange, colour ; in absolute ether with a yellow colour, less than in chloroform ; in sulphide of carbon with a fiery red colour, by dilution becomes orange yellow. Glacial acetic acid dis- the crystals on heating only. Dilute acetic acid, dilute mineral ammonia, caustic soda, do not dissolve the crystals. Nitric acid d over the crystals produces a blue colour, which immediately

Reactions of the crystals.

passes into yellow. When dilute or concentrated nitric acid is add to the solution of the crystals in acetic acid, the blue colour is al produced, but disappears immediately. Neither the chloroform nor t ether or alcohol solution give any blue colour with nitric acid; t solutions are simply discoloured.

b.

Oxo-luteine, the characteristic Yellow Ingredient of the Yelks o Hens' Eggs.

Chloroform extract.

Yelks of hens' eggs were shaken with chloroform. On standing yellow solution settled, on which white vitelline floated. The soluti assumed to be saturated, had spectrum of three bands in blue, indi and violet.

1. 99 to 117 = 18 ; int. 2. R. α.
2. 125 „ 145 = 20 ; „ 2. „ β.
3. 155 „ 174 = 19 ; „ 1. „ γ.

End at 190.

Diluted with one-third volume of chloroform the solution show spectrum—

1. 103 to 117 = 14 ; int. 2.
2. 126 „ 144 = 18 ; „ 2.
3. 159 „ 173 very feeble.

End at 196.

Again observed after standing 24 hours—

1. 103 to 117.
2. 126 „ 144.
3. 158 „ 172.

End at 200.

This solution shows the bands very well, and better than any of following solutions in ether or alcohol. It is necessary to obtain solution very brilliant by letting it stand, and filtering and decanting repeatedly from deposits of aqueous matter.

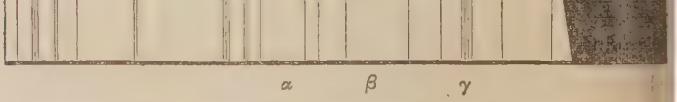


Diagram of Spectrum of Luteine from Yelk of Egg in Chlorofo

Ether extract.

The *ether solution* of the extract from yelk has a splendid ye colour. In its saturated state one centimetre thickness cuts off spectrum at 100 nearly. Much diluted there appears spectrum bands—

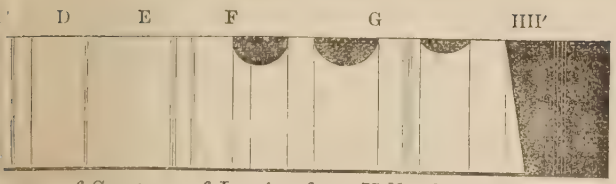
1. 108 to 125 = 17; int. 2. R. α.
2. 134 „ 155 = 21; „ 2. „ β.
3. 168 „ 184 = 18; „ 1. „ γ.

End at 196.

diluted the spectrum measured—

1. 110 to 125.
2. 135 „ 155.
3. 168 „ 184.

End at 205.



gram of Spectrum of Luteine from Yelk of Eggs in Ether.

was boiled with alcohol of 85 per cent., and the filtrate separated funnel. On cooling the solution immediately became turbid. turbid state it allowed the red and green of the spectrum to pass, h it was cloudy; complete darkness began at 112. On being it cleared up, and now allowed bands to be observed—

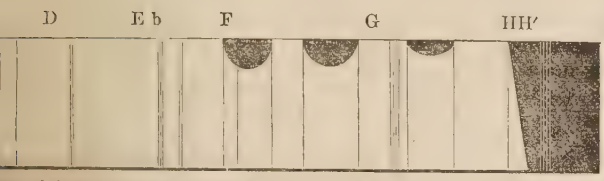
Alcohol extract of yelks.

1. 111 to 128 = 17.
2. 135 „ 155 = 19.

ined questionable whether or not there was a third band in violet, es of it were only perceptible while the fluid was very hot. tanding the alcoholic solution deposited a fatty matter, and quite clear. It showed three bands—

1. 108 to 124.
2. 134 „ 152.
3. 167 „ 183.

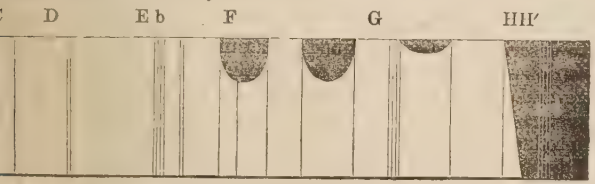
End at 200.



m of Spectrum of Luteine from Yelk of Egg in Alcohol heated.

this clear alcoholic solution was heated the intensity of the vas diminished to less than one-half, the third band becoming nperceptible. On cooling the absorption bands gradually re- their former intensity.

Bands lose intensity in hot fluid.



ram of Spectrum of Egg Luteine in Alcohol after cooling.

Nitrous acid absorbs more while hot.

This phenomenon is the reverse of the one I observed upon vegeta matters, which became darker in their bands by heating. The vapours of nitrous acid also show a greater absorption by heat the absorption lines augmenting greatly in number with the rise temperature.

The bands of the heated luteine solution measured—

1. 110 to 126.
2. 137 „ 154.
3. 168 „ indistinct.

} Band appeared between gorgeous colour bands of blue, indigo, and violet.

End at 196.

Comparison of spectra.

The spectrum of the alcoholic solution of luteine from yelk is the fore identical with that of the ether solution of the same substan

Displacements of bands.

The spectrum of the chloroform solution differs, however, in this, t its three bands are displaced by about 10 points towards the red end the spectrum, although they retain almost exactly their position relativ to each other. Similar displacements of bands produced by differ solvents upon the spectra of the same bodies are not unfrequen observed.

Comparison of Spectra of Luteine.

From Ovaries of Cows.	*From Hens' Eggs Yelks.*
Alcohol extract.	*Alcohol extract.*
1. 106 to 122 = 16 int. 2. R. α.	1. 108 to 124 = 16 int. 2. R
2. 130 „ 150 = 20 „ 2. „ β.	2. 134 „ 152 = 18 „ 2. „
3. 165 „ 179 = 14 „ 1. „ γ.	3. 167 „ 183 = 16 „ 1. „
End at 198.	End at 200.
Chloroform extract.	*Chloroform extract.*
1. 90 to 110 = 20 int. 2. R. α.	1. 103 to 117 = 14 int. 2. R
2. 116 „ 137 = 21 „ 2. „ β.	2. 126 „ 144 = 18 „ 2. „
3. Observed, but margins not defined.	3. 158 „ 172 = 14 „ 1. „
Cut off at 189.	End at 200.
Ether extract.	*Ether extract.*
1. 110 to 125=15; int. 2. R. α.	1. 108 to 125 = 17 int. 2. R
2. 135 „ 155=20; „ 2; „ β.	2. 134 „ 155 = 21 „ 2. „
3. 168 „ 184=18; „ 1; „ γ.	3. 168 „ 184 = 18 „ 1. „
	End at 196.

There is no doubt that if all spectra could be measured at one the same time, and with one and the same intensity of light, the cidence of the data would yet be greater than it is. Upon a compa of all the data, and taking into consideration the chemical reac above described, we are justified in assuming that:—1. The spect the various extracts from the corpora lutea are identical with tho the several extracts from hens' eggs. 2. A fortiori the body prod the spectra in the extracts from the corpora is chemically identical that producing the spectra in the extracts from yelks. 3. This bo a yellow crystallizable substance which has not hitherto been defin which I attribute the name of luteine.

This body has, however, repeatedly engaged the attention of inqu Thus Holm, under the guidance of Städeler, isolated it, and desc

References to literature. Diagnosis from hematoidine.

nann's Journal, vol. 100, p. 142) most of its properties, excepting ectroscopical ones, but believed it to be hematoidine. But *luteine* entirely from *hematoidine*. Luteine is the specific physiological ct of a certain normal cell-formation which builds up the corpora

Hematoidine is an abnormal product of pathological processes, or events an accidental formation derived from effused blood out of the of vital action. Luteine is deposited in granules within cells, a ct of their chemical life; hematoidine is deposited in crystals and lar masses in the midst of effused and decomposing blood. The idea he yellow or red matter of the corpora lutea was hematoidine origi- from the circumstance that corpora lutea sometimes, in a few animals as sows, and sometimes in women who have died of disease, contain vasated blood in their centre, and in this a few crystals of hema- ie. This blood is a pathological formation, or if not, at all events normal one. For in the hundreds of ovaries from cows, sheep, or animals which I have dissected, I have only twice found any effused in the corpora lutea, and only once in any other part of the ovaries the arteries and veins. Bischoff (Entwicklungsgeschichte der ethiere, p. 32, et seq.) gives a description of the corpora lutea to I assent in all its features. He says nothing of the bloodclot has latterly been so often alluded to in relation to hematoidine, which has actually been figured by Henle (Anatomie des Menschen, II. p. 478, fig. 372, ref. 5) as situated in the cavity or in the of the corpus luteum, already approaching its natural greatest However often such abnormal products may have been observed hers, the hematoidine crystals contained in the interior of these ovarian apoplectic effusions are things which are quite different the granular luteine contained in the cells of the corpora even of those corpora lutea which may contain such a sangui- effusion, though they may be lying side by side. Still less bility has now the view originally propounded by Paterson (Edinb. and Surg. J., Vol. 53, No. 142, 1840, p. 1, and No. 45, p. 390), the corpus luteum was the product of the transformation of an on of blood between the two layers of the Graafian follicle. The s luteum is a new growth from the membrana granulosa of the e, in the formation of which extravasated blood has no share, and evelopment of which it could only impede. Städeler (Erdmann's ., Vol. 100, p. 148) investigated the nature of the yellow matter yelks of eggs, probably in connexion with the studies of Holm. d not obtain a crystallized body, and came to the conclusion that ellow matter was either hematoidine (such as Holm had defined it), me very nearly related body. The spectral phenomena of the cts from yelk did not engage his attention.

teine has no chemical or physical relation to hematoidine, or any derivate of hematocrystalline. The latter when treated with uric acid all yield cruentine, with a variety of modifications, and lar absorption spectra, several of which I described in the last Report. ne becomes blue, then green, with sulphuric acid, and then shows ectrum at all like anything obtained from blood. Luteine has its ption bands in blue, indigo, and violet, while all derivates of hema- talline have their absorption bands in red, yellow, and green, tine alone just leading with its last band into blue. The hematine is of hematocrystalline is very difficult to destroy by chemical s, and even strong reagents produce changes so to say only upon its ce. Luteine is easily and permanently altered by the same agents. c acid transforms all relations or derivates of hematocrystalline

with difficulty into intense yellow substances ; but luteine is by nitri acid and some nitrates immediately transformed into a colourless o white product. The crystals of luteine have no similarity either i shape, size, or appearance, to those of hematoidine ; their facile sol bility in ether, chloroform, and alcohol, distinguishes them entirely fro hematoidine, which is quite insoluble in these agents. When Valentin (Günsburg's Zeitschrift N. F. 1, 46, 1859) stated that he had extracte "hematoidine" from gallstones by means of chloroform, he misto cholophæine or bilirubine for hematoidine. Cholophæine differs much from hematoidine on the one as from luteine on the other han

Diagnosis of luteine from cholophæine.

The mistake of Valentiner was repeated more formally by Robin an Riche (Compt. Rend. de Séances de l'Acad. de Sc. Tome 41, Séance d 1er Octob. 1855), who obtained a quantity of cholophæine from a cy in the liver, and by the aid of three elementary analyses, which clear show that they referred to cholophæine, came to the conclusion th they had to deal with hematosine (the body which we usually ter hematine) which had lost its amorphous character, and its iron, tak up an atom of water, and become crystallized hematoidine. It is on necessary to compare the reaction of Robin and Riche's hematoidi crystals with the reaction of cholophæine which I have described, order to be quite sure that they had cholophæine before them. On t other hand, none of the physical or chemical signs of their crystals a identical with those which Virchow has given as being characteristic hematoidine.

What ultimately remains of hematoidine, when the various bodi which have been ranged under its name are eliminated, is not difficu to tell. Hematoidine is probably decomposed hematocrystalline. crystals are most likely pseudomorphoses of the original forms of hem tocrystalline, consisting of the albuminous body intimately mixed wi the hematine which before decomposition constituted the soluble a crystallizable hematocrystalline. The amorphous hematoidine on t other hand is so little defined, that we cannot at present receive it a characterized chemical object.

I therefore add to the conclusions above given yet the following

4. Luteine differs entirely from hematoidine on the one and fr cholophæine on the other hand, and must not, and after this exposit cannot, any longer be confounded with either of them. 5. The bod described by Holm and Städeler under the name of hematoidine are hematoidine but luteine. 6. The bodies described by Valentiner a by Robin, Riche, and Mercier under the name of hematoidine are hematoidine but cholophæine or bilirubine. 7. Hematoidine is a u ful expression for certain microscopical crystals and bodies occurri in effused blood, the substance of which has not as yet been chemica isolated or defined.

The discovery of luteine in the ovaries, and of its identity with yellow matter of the yelks, may suggest some revision of the doctr of the homologies between the various parts of the ova of mammals the eggs of birds, and assist in elucidating the very obscure physiol of the corpora lutea. For, though it is easy to tell the mechan purpose of these growths, it is difficult to explain the object of t peculiar chemical ingredients.

c.

Butyro-luteine, the yellow ingredient of Butter.

Yellow and white butter.

It had never to my knowledge been asked in scientific inquiries, which particular circumstance butter owed its yellow colour. But

cularly during winter, might assume a perfectly white colour, and the prejudice of the producers or consumers termed it "poor." vendors to avoid the effect of this error had recourse to artificial ring ingredients. We shall see in the sequel how closely the dyeing ts used for this purpose, namely, the juice of carrots, and of the ns berry or annatto, resemble, in their optical phenomena at all ts, the natural butyro-luteine of good healthy butter.

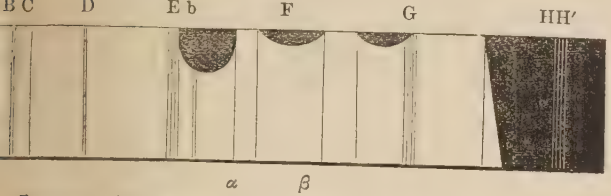
Dyed butter.

August last I obtained a small quantity of the butter which is larly supplied to St. Thomas's Hospital from a farm in the neighhood of London. It had a fine "rich" yellow colour, a pure fresh , and had been mixed with salt and formed into pats. On being l in hot water it remained opaque, from the salt, water, and caseine ; ts therefore mixed with an equal volume of chloroform, and the ion filtered from the deposit. This solution yielded spectrum—

St. Thomas's Hospital butter.

1. Band in blue, 90 to 108, Int. 2. R. α.
2. „ indigo, 116 „ 137, „ 1. „ β.
3. Third feeble band.

Ends at 189.



Intensity Diagram of Spectrum of Butter in Chloroform.

nother quantity of butter was now fused in a glass vessel, heated all the water had boiled away, and the salt and caseine had been ited, and filtered through paper on a heated funnel. In a test tube wed a fine golden colour, and before the spectroscope it exhibited the α and β bands of luteine, but moved by about 20 points more rds the violet end.

1. 110 to 123.
2. 134 to 153.
3. 159 to 173, very feeble.

End at 196.

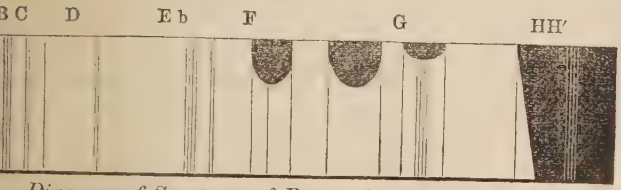


Diagram of Spectrum of Butter clarified and fused.

the butter cooled the bands became more intense ; the higher it ieated the less was the absorption exhibited by the bands. The band was not visible while the butter was very hot, but became y visible a moment before it congealed.

d.

Cysto-luteine in the fluid contents of an Ovarian Cyst.

e tumor came from a cow ; the entire ovary was one large cyst uring three inches in circumference and two inches in length. It

Luteine in fluid of an ovarian cyst.

contained a yellow fluid, which amounted to 35 cubic centimetres b measure. A slight deposit of fibrine of the size of a pin's head wa observed in it; it fluoresced green.

Spectrum: In thick layers red, yellow, and green, to 87, appeared where the spectrum was suddenly cut off. Diluted with half wate bands appeared—

1. In green 92 to 108=17; Int. 5; R. *α*.
2. In blue 115 „ 130=15; „ 3; „ *β*.

With gaslight it remained questionable whether or not there was third band. Drummond's light with a layer of the natural solutio 1 ctr. in thickness gave spectrum—

1. 92 to 108=17; Int. 5; R. *α*.
2. 116 „ 138=22; „ 5; „ *β*.
3. 150 „ 163=13; „ 1; „ *γ*.

End of violet at 195.

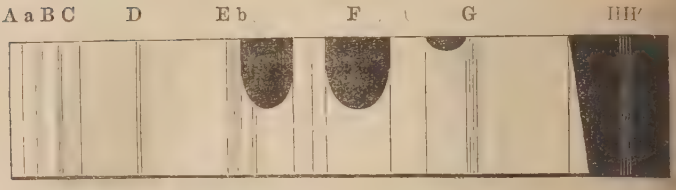


Diagram of Spectrum of Luteine from Ovarian Cyst.

The serous solution therefore yields the same measurements as th chloroform solution of ovario-luteine; it therefore probably contain the same kind of luteine as the corpora lutea. When I attempted t extract it the following was observed:—The fluid was so albuminou that on heating it became solid in the tube. Alcohol precipitated a immense quantity of albumen of a white colour, and itself assumed hardl any yellow colour. The luteine therefore adheres strongly to the pr cipitated albumen. I therefore preserved the mixture for a futu favourable opportunity, when it may be treated together with large quantities of similar matter.

Remarks.

The above observation, though single, appears to me particularl interesting; and it will be very important to ascertain whether the san holds good of ovarian cysts generally. The luteine contained insolub in the cells of the corpora lutea is here dissolved in an albuminous liqui If the deposition in granules was accompanied with the presence of fat granules, the solution is distinguished by the absence of all fat. Whi together with fat luteine could be easily extracted by alcohol, it cou scarcely be extracted by means of this agent from the albumino solution. The cells of the corpus luteum had perished, or not be formed; the limitary membrane of the Graafian follicle had, howeve apparently preserved a portion of its specificity as regards the chemi nature of its secretion. Fibrine, present in large quantity in the corp luteum, was here only slightly represented; albumen prevailed, acco panied by the soluble alkaline phosphates, which also occur in abu dance in the corpora lutea. The substance which I have above descrit as apparently attaching to the white corpuscles of the blood was n diagnosed in the serous fluid, and was probably absent.

e.

Seroluteine from Animal Blood.

Seroluteine from animal blood.

t has long been supposed that the serum of the blood contained a ow colouring matter, as it preserves a yellow colour, notwithstanding measures which may be adopted for its clarification. It was nised that this was colouring matter of bile, but this was negatived direct research. Cholophæine occurs in the serum only in diseases, icularly obstructive diseases of the liver, or those which cause great estion of the liver from a distance, like pneumonia and puerperal r. Normal blood has never been found to contain cholophæine. 1835 Martial Sanson published an essay on the colouring matters of blood (Journ. de Pharm. 21, 420), in which he announced the exist- e of a yellow colouring matter by the side of the ordinary red redient, but he did not state that it was contained in the serum. He ined it in the following matter :—Dried ox-blood was powdered and ed in alcohol of 18°, whereby a little grease and some salts were oved. The powder was then washed with distilled water. The poration of these washing waters yielded a residue of deep yellow ur and strong salty taste. This residue was now dissolved in hol of 18°, afterwards in alcohol of 36° containing some ether; it next filtered from albuminous and saline particles, and yielded nately a liquid which had a deep golden yellow colour.

Sanson's "matière jaune."

he blood thus deprived of its soluble salts and of a portion of its ow matter, was dried, and repeatedly exhausted with boiling alcohol 6°. The three first decoctions yielded on further treatment choles- ne and a small quantity of a brown matter, from which seroline could eparated. The fourth and subsequent decoctions were evaporated to ess by themselves and left a mixture of three substances. From e cold water extracted a *yellow matter*, warm alcohol a fatty tance, and there remained a thin layer of bluish matter, which ng been washed with alcohol and ether of temp. 40° C. dissolved in ng alcohol with a fine *sky-blue colour*.

roperties of the Yellow Matter.—It is soluble in water, alcohol, r, and fats. The concentrated acids and alkalies do not change it le cold. When dry and in bulk its colour is orange yellow. By rine it is discoloured, but the liquid contains no iron. It is the uring matter to which blood-serum owes its yellow colour, and it res to the fats which are extracted from blood by alcohol. As it y combines with other matters it is very difficult to obtain it ctly pure.

Properties of the "matière jaune."

ther proceeding for obtaining, and Properties of, the Blue Matter.— d is precipitated by basic lead acetate, the precipitate is dried, and d with alcohol of 36°. The liquid quickly assumes a blue colour. first decoctions become turbid on cooling, and deposit a large tity of fat, which carries the blue matter down with it; but after a a tincture is obtained which remains transparent, and from which lue matter can be isolated by the process stated above. When the blue matter is insoluble in cold alcohol, ether, and water; it little soluble in boiling alcohol, but is precipitated on cooling. concentrated acids do not change it; the very concentrated uric acid decomposes it. Ammonia by itself does not change it. nonia added to the alcoholic solution causes it to assume a greenish r, and the subsequent addition of an acid restores the blue colour; ine discolours it; the fluid contains no iron.

Properties of the "matière bleue."

nson states that Chevreul, Le Canu, and Lassaigne have met with

a similar blue matter in the blood of hysteric persons. He claims f himself the merit of having shown this matter to be a normal const tuent of blood. F. Simon and other subsequent investigators could n find the blue matter again, and of the yellow they could not form pure preparation or a clear idea. The production of a blue colour fro blood by means of ozonised ether has invested this question with a ne interest. To this we may add the question after the origin of th yellow matter in cholera urine, which with nitric acid yields a re and blue product, choleraic urorubine, and choleraic urocyanine, and th entire question of yellow, blue, and red matters observed in urine by number of chemists. Seeing that luteine from eggs and ovaries als yields a blue colour by nitric acid, surmises are naturally aroused an tested experimentally.

Treatment of serum for luteine.

I caused a quantity of sheep's blood to be collected in a glass vess in the slaughter-house, and to be placed in a secure corner. Afte 24 hours standing I carefully decanted the serum; this was no allowed to stand twice 24 hours in high cylindrical glass vessels, and th supernatant clear serum was drawn off from the deposit of bloo corpuscles by means of a syphon. It was then filtered repeatedl through many folds of finest filtering paper, but by no means it coul be made bright or translucent, it always retained a certain degree o opacity like ground glass. It was yellow, somewhat reminding of red In layers of from $\frac{5}{8}$ to $\frac{3}{4}$ inch it showed the blood spectrum before th spectroscope, and with the most powerful Drummond's light which could produce it exhibited the band α of luteine.

105 to 117=12 ; Int. 2 ; R. α. Blue interval to 125.

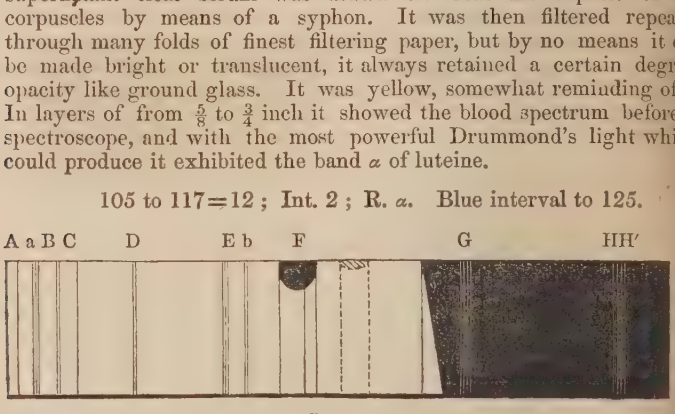


Diagram of Seroluteine. (*Blood-bands omitted.*)

(See also Plate V., fig. 10.)

I suspected at times the existence of a second band, at others al seemed to fuse into continued darkness. If the serum is diluted s that the absorption due to hematocrystalline is removed sufficiently so a not to interfere, the luteine bands become imperceptible. I hav faintly indicated a second band on the plate, but I am not absolutely certain about it. I believe, from repeated experiments, that serum cannot by any means be perfectly freed from blood corpuscles. I hav never seen serum without the blood-bands in the spectroscope, and it i not impossible that a great part of its yellow colour is due to thes corpuscles. Although the above spectrum has been indubitably see and scrutinized by me during an entire afternoon, I have failed in othe specimens of serum to find it, and therefore it is possible that it may b an accidental ingredient. I have not yet succeeded in extracting from serum, and believe that even if luteine were proved to b certainly and always present, the extraction would be exceedingl difficult. For I did not succeed, by a simple process of extractio

th alcohol, in obtaining any luteine from serum of an ovarian cyst, in ich this substance was unquestionably present in large quantity; so ongly does it adhere to precipitated albumen.

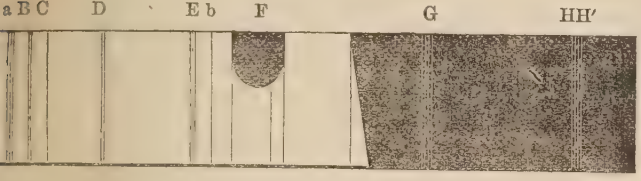
f.

Intestino-luteine from the Yellow Evacuations of sucking Infants.

Intestino-luteine from evacuations of sucking infants.

These fæces when healthy are of a golden yellow colour, semifluid nsistency, and a slight odour of warm sour milk. It is difficult to tain them without admixture, but their constituents cannot be mis-en. Mixed with alcohol in excess a great amount of a body having st of the properties of caseine falls down in flakes, while other tters dissolve, amongst them nearly the whole of the yellow coloured redient. The dilute solution exhibits an absorption band in blue, 3 to 115, which when the layer of fluid is made thicker gains in width, l becomes

101 to 118=17; Int. 4; R. *a*.



Intensity Diagram of Intestino-luteine.

Last reading 102 to 118. Only one band could be seen distinctly; a ond band was suspected at 126 to 142, but from 130 every part to let was already very dark. Chloroform and ether solution must be mined with a view to determine the question whether or not there is re than one band.

The alcoholic solution on standing became a little more red, but in thin ers was still yellow. It deposited a quantity of white cholesterine in stals. After standing in a stoppered bottle for a period of six weeks till showed the same spectral phenomena as at first.

Comparison of adult human excretions.

I compared some chloroform extract of dried adult human fæces ich had been kept during several years, and had been repeatedly ered from a precipitate which formed at intervals. The extract was low, showed no absorption band anywhere, and passed light to 7.

Physiological considerations.

Physiological considerations.—It has hitherto been generally accepted a matter requiring no proof that the fæces of infants and adults owed ir colour to an admixture of colouring matter of bile. Of course in case of an omnivorous adult the accidental ingredients were also en into account, but in infants the colour was to be derived from pure lophæine. The above observation shows this surmise to be quite ounded. Cholophæinates which are soluble in alcohol possess no ab-ption bands; the yellow extract of the evacuation of infants does not ld the reaction of cholophæine or bilirubine, and consequently, in case of infants at the breast, cholophæine is not excreted. But ther circumstance aided this erroneous belief, and this leads us to ne pathological considerations. When infants fed upon milk become arranged, their evacuations soon become green, and this phenomenon

Pathological considerations.

in itself is a sign of digestive disturbance. Now it was assumed that this green colour was due to biliverdine which had been produced from the bilirubine by the diseased process. It is, however, now very doubtful whether the green colour of diarrhœic fæces of infants, and of the meconium of the fœtus, is really produced by biliverdine. It is more probably a mixture of intestino-luteine with a peculiar blue product of its oxydation, or a green simple product of that oxydation.

Origin of intestino-luteine.

The origin of intestino-luteine itself it is not difficult to surmise. It might be derived from the milk, which, as I have shown above, contains in its butter globules a quantity of luteine with three bands. This luteine would therefore be required to undergo a considerable change before it could become intestino-luteine. But we have a much nearer source for this substance, and that is the mucous membrane of the intestine itself. The intestinal juice has a wine-yellow colour, as has been shown by the experiments of Thiry, lately confirmed by Quincke. It is probable that this colour is caused by the luteine here alluded to. The green colour of diarrhœic fæces might therefore be caused by a change in the secretive power of the membrane, or by an influence of the contents of the intestine upon the luteine secreted as such. Physiological inquirers, who have leisure to repeat the experiments of Thiry, should therefore be careful to place the intestinal juice before the spectroscope, in order to decide whether or not it possesses the absorption band of lacto-luteine above described.

B. *Vegetable Series.*

a.

Yellow Substances showing Spectra with continued Absorption of Blue, Indigo, and Violet, without detached Bands.

Such are exhibited by the yellow immediate principles of the following vegetable matters :—

French berries. (Chrysorhamnine, Xanthorhamnine.)
Weld or dyer's weed. (Luteoline.)
Quercitron. (Quercitrine.)
Turmeric. (Curcumine.)
Purrée. (Euxanthic acid.)
Careopsis lanceolata.
Heliochrysum bracteatum.
Viola lutea.
Acacia decurrens.
Helianthus macrophylla.
Berberis Darwinii.
Gnaphalium fœtidum.

French berries.

French Berries.—These berries are the fruit of several species of rhamnus. They differ in size and construction, but on an average are of the size of peas, and wrinkled all over their green surface ; they contain a number of small hard seeds, and have a disagreeable bitter taste. Of the four varieties of these berries which occur in trade I had only one, the real "graines d'Avignon," at my disposal ; the Persian, the Levantine or Turkish, and the Spanish berries are not easily obtained. The French berries come from rhamnus infectorius. The yellow matter obtained from a large light coloured variety of berries by Kane, chrysorhamnine, had the composition $C_{23}H_{22}O_{11}$. It was of golden yellow colour, insoluble in water, soluble in ether. By pro-

Chrysorhamnine and Xanthorhamnine.

;ed boiling with water while exposed to air it absorbed 1 H_2O and and was transformed into xanthorhamnine $C_{28}H_{24}O_{14}$. This latter oluble in water, but insoluble in ether ; it is present, ready formed, he dark brown variety of berries.

'he watery or alcoholic solution of xanthorhamnine presents a con- ous absorption of the blue end of the spectrum, without any detached ds. A saturated watery decoction of bruised berries was cleared up lcohol. It passed all colours from red up to 107. Diluted+1 the rption receded to 121 ; diluted+2 to 130 ; and 3 to 147 ; diluted ery pale yellow to 170.

Weld or Dyer's Weed (*Reseda luteola*).—Weld is now nearly obso- as a dye, picric acid having taken its place. The entire plant is vaded by a yellow colouring matter, which is extracted by decoction. s substance by its discoverer, Chevreul, has received the name of teoline." It crystallises in yellow needles, which sublime unchanged, less soluble in water than in alcohol and ether, and have an acid racter and reaction.

Weld or dyer's weed.

Luteoline.

n a decoction of weld greenish yellow flakes are deposited, consisting uteoline and other matters in chemical combination. The filtrate is lish yellow, and shows the general absorption of all yellow sub- ces, namely obscuration of the violet, indigo, and blue parts of the trum to 138. Diluted it passes all colours to 160. By no treatment d I obtain separate bands; but as the solution seems to contain a colouring matter as well as luteoline, the experiment should be ated upon pure luteoline.

Quercitron.—This is the bark of an oak tree of North America, rcus nigra or tinctoria. A preparation sold at the drysalters is ed extract of quercitron or "flavine." I have not been able to rtain the manner in which this is produced. Possibly it is an impure paration of the substance called by Chevreul "quercitrine," namely, deposit which forms when a decoction of the powdered bark is ved to stand for some days. Bolley believed that this consisted of citric acid, $C_{18}H_{16}O_9$, H_2O. But Hlasiwetz (Ann. Chem. 112, 107) ved its formula to be $C_{29}H_{30}O_{17}$. I produced a boiling watery solu- of the flavine, which was reddish and turbid. Its spectrum was off at 130 by a solution of the same tint as one of luteoline which off the spectrum at 135. The visible blue had a violet tinge. On ion the absorption receded to 135 ; diluted+2 to 140 ; +3 to 145 ; to 169. At this point it was only pale yellow. When still more ed to quite pale yellow the entire spectrum to 188 passed. No ls were detached at any time.

Quercitron.

Flavine.

Quercitrine.

Turmeric.—This substance, the root of yellow ginger, Curcuma longa, ains a yellow dye, curcumine, easily soluble in alcohol. A trans- nt solution passed red, &c., to 112 ; diluted blue to 117 ; more diluted 25. Again diluted with alcohol a hazy violet appears to 146 ; more ed indigo and violet to 185. No bands were detached at any time. as the extract contains a fluorescent substance which exhibits a n colour in the cone of sunlight, (it is not proved that curcumine is that fluorescent substance,) the absorption of the blue and violet be partly due to this matter, and not to the yellow dye only, which nt possess bands ; but the bands might disappear before the fluo- nt body is sufficiently diluted to let any light at all pass in blue violet. Turmeric becomes brown by alkali, and is used as a test for is in chemistry.

Turmeric, curcumine.

Fustet, or *fiset-wood*, the wood of Rhus cotinus, does not seem to be in dyeing any more ; I could not obtain any at the drysalters.

Fustet obsolete.

Purrée or Indian yellow.

Purrée or Indian yellow is a pigment of uncertain origin, probably the juice of a plant which is evaporated with magnesia. It contains *euxanthic acid* $C_{21}H_{18}O_{11}$. The solution of this acid is feebly coloured and has no particular bands. Its dyeing qualities appear best in combination with bases, particularly magnesia. The pigment which I obtained in the colour shops had been treated in this country, and was in thin cakes, not the roundish lumps of commerce.

The alcoholic extracts of the following *yellow flowers* also yielded spectra with continuous absorption of the blue end, without any bands.

Careopsis lanceolata.

Careopsis lanceolata.—Solution reddish-yellow, saturated. Cut off at 72; gradually to 100, where dark; diluted one-half recedes to 128; diluted two-thirds to 140. Diluted to pale yellow the entire spectrum passes. No bands at any time.

Heliochrysum bracteatum.

Heliochrysum bracteatum.—Orange yellow solution. Cut off gradually at 102. Diluted + 1 recedes to 124; + 2 recedes to 135; + 4 to 162; + 8 to 195. No bands at any time.

Viola lutea.

Viola lutea.—Light greenish yellow solution. Cut off at 129. Diluted + 1 recedes to 145; + 2 to 165; + 3 no further recession takes place, and no band is developed. The solution is now only palest greenish yellow.

Acacia decurrens.

Acacia decurrens.—Light greenish yellow solution. Cut off at 134. Diluted + 1 recedes to 148; + 2 to 155; + 5 to 163. The solution is now only palest yellow, + 10 to 170. Hardly coloured now; the matter which cuts off is perhaps colourless.

Helianthus macrophylla.

Helianthus macrophylla.—Solution pale yellow. Passes entire spectrum to 177, even in feeble light. No bands. Observation not conclusive; more concentrated solution to be examined.

Berberis Darwinii.

Berberis Darwinii.—Passes entire spectrum to 189. Questionable whether bands; more concentrated solution required, for which there was not enough material.

Gnaphalium fœtidum.

Gnaphalium fœtidum.—Cut off at 144. Diluted + 1 recedes to 160; + 2 to 165. No bands detached. Rest of spectrum very brilliant.

b.

Yellow Substances showing Spectra with a single Absorption Band.

Yellow wood.

Yellow wood, or *fustic*, is the wood of a kind of mulberry tree, *morus tinctoria*. It contains *moritannic acid*, $C_{14}H_{16}O_{10}$, which is the carrier of the tinctorial power, either free or in combination with calcium. To test its spectrum I made a decoction of powdered yellow wood, and evaporated the watery solution after filtration on the steam bath. After 24 hours standing an orange coloured precipitate, a mixture of the acid and its calcium salt, had deposited. Both the mother liquor and the solution of the isolated deposit presented the same spectral phenomena. The concentrated solution cut off the blue and violet and a portion of the green part of the spectrum.

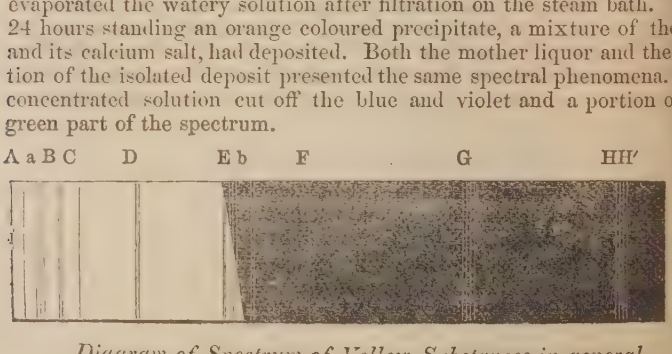


Diagram of Spectrum of Yellow Substances in general.

is absorption, common to all yellow coloured substances, I have represented in fig. 1, plate I. But on dilution the absorption ed to 130, leaving a detached very pale band.

100 to 115=15; Int. 2; R. *α*.

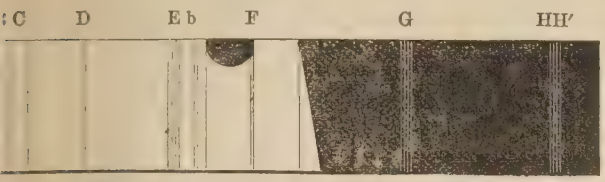


Diagram of Spectrum of Moritannic Acid.

See also Plate I., fig. 2.

vas not able to determine with certainty whether there was not a d band, as the solutions were always somewhat turbid, and the s of this research did not permit me to follow the subject further. owever, there are two analogous bodies, the one lactoluteine, already ibed, and the other the yellow colouring matter of the flower of alceolaria, which possess but one absorption band in blue, and on er dilution do not exhibit any other detached absorption, I take lence from these analogies to believe that moritannic acid also sses but one absorption band.

lceolaria.—The yellow variety of this esteemed flower yielded a Calceolaria. alcoholic extract of a splendid *orange* colour, which exhibited a e absorption band in blue.

1. 103 to 118=15; Int. 3; R. *α*.

Sharply cut off at 125.

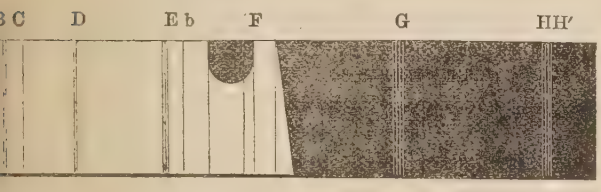


Diagram of Luteine of Calceolaria.

See also Plate I., fig. 3.

further dilution violet to 145 appeared, the band *α* disappeared, o new detached band was visible anywhere.

c.

Two-banded Luteine Spectra.

w Vegetable Matters which show Spectra very much resembling hat of Animal Luteine, but having probably Two Bands only.

Crocus or saffron, the stigmata and parts of the styles of a Crocus or saffron. eous plant, contains crocine, $C_{58}H_{84}O_{30}$ (?) It occurs also in the of Gardenia grandiflora. Concentrated sulphuric acid transforms

crocine into an indigo blue, later into a violet substance. Boiled with dilute acids it is split up into crocetine and sugar.

$$\underbrace{C_{68}\,H_{84}\,O_{30}}_{\text{Crocine.}} + 5\,H_2\,O = \underbrace{C_{34}\,H_{46}\,O_{11}}_{\text{Crocetine.}} + 4\,\underbrace{C_6\,H_{12}\,O_6}_{\text{Sugar.}}$$

Crocetine retains the principal dyeing properties of crocine, and its reaction with concentrated sulphuric acid.

A hot or cold alcoholic solution shows two bands in blue and indigo.

1. 114 to 135=21. Int. 4. R. α.
2. 145 „ 165=20. „ 4. „ β.

End at 184.

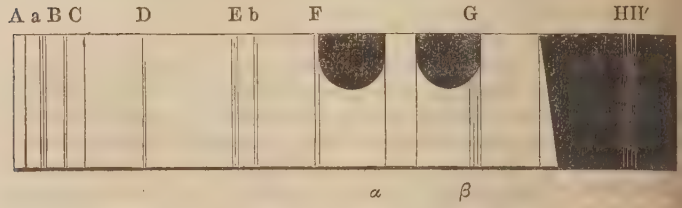


Diagram of Spectrum of Crocine.

See also Plate I., fig. 5.

In this spectrum the band β is placed more towards the violet end than in any other yellow solution I have yet examined. It just overlies the group of lines termed G; only in Verbascum phlomoides, plate III fig. 2, does the second band just touch G.

Helianthus annuus, Sunflower.

2. *Helianthus annuus*, Sunflower.—A small flower of this kind, from St. Thomas's Hospital gardens, gave a yellow but turbid water extract. The alcohol extract, however, was clear, and of a splendid yellow colour. It showed spectrum—

1, in blue, 109 to 125=16. Int. 5 R. α.
2, in indigo, 136 to 157=21. „ 4 „ β.

Cut off at 172.

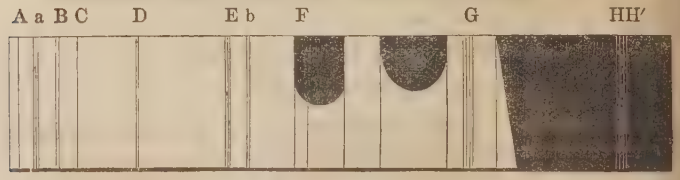


Diagram of Spectrum of Helianthus, yellow.

See also Plate I., fig. 6.

Much diluted, and with bright oxyhydrogen light, violet extends to 200, and there is probably no third band present.

Leontodon taraxacum, Dandelion.

3. *Leontodon taraxacum*, Dandelion.—The whole plant is officinal in the Pharm. Brit. the root only. Alcohol extract of the flower, concentrated, is cut off at 105. Diluted bands appear.

1. 110 to 124=14. Int. 3.
2. 130 to 153=23. „ 4.

ected band begins about 166, if present. Remarkable that the band is of greater intensity than the first.
diluted, and with strongest Drummond light, the third band possible from 160 to 179. End at 205.

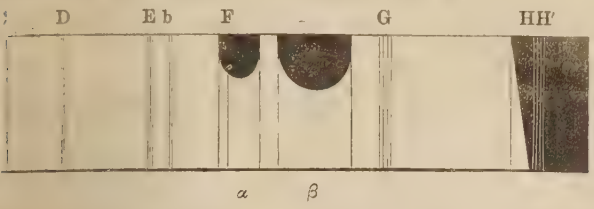


Diagram of Spectrum of Taraxacum—yellow.

See also Plate I., fig. 7.

Hieracium pilosella, yellow composite, from St. Thomas's Hospital s. Cold alcohol extract. Hieracium pilosella.

1. 110 to 125=15. Int. 3. R. α.
2. 135 „ 155=20. „ 3. „ β.

End at 190.

hird band appears on further dilution.

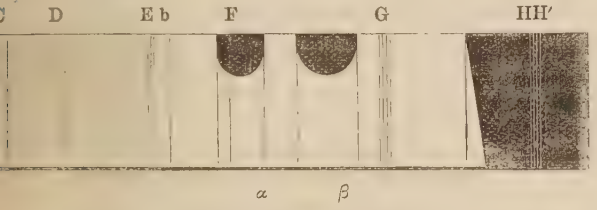


Diagram of Spectrum of Hieracium—yellow.

See also Plate I., fig. 8.

Gazonia elegans.—Flower orange, with black and white spots of petals. Has a white juice like Leontodon. Splendid deep cold alcohol extract, not so orange as that of calceolaria. Gazonia elegans.

1. 105 to 128=23. Int. 4. R. α.
2. 137 „ 158=21. „ 4. „ β.

End at 169.

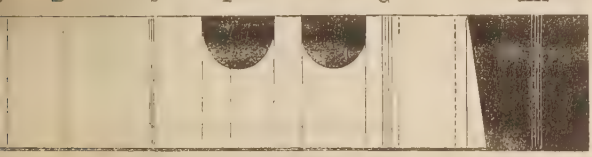


Diagram of Spectrum of Gazonia.

See also Plate I., fig. 9.

e diluted, violet is prolonged to 195, but a third band cannot ly be distinguished. Stronger light and more solution allowe a matical shade 168 to 187 to be distinguished.

6. *Hypericum oblongifolium.*—Solution yellow, made a deposit fro which it was filtered.

1. 113 to 125=12. Int. 4. R. α.
2. 136 „ 152=16. „ 3. „ β.

Last term a little uncertain. End at 160; after dilution at 184.

Hypericum oblongifolium.

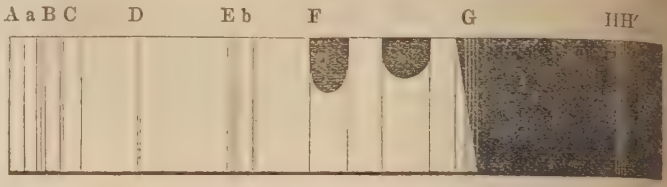


Diagram of Spectrum of Hypericum—yellow.

See also Plate I., fig. 10.

Acacia leprosa.

7. *Acacia leprosa.*

1. 113 to 127=14. Int. 4. R. α.
2. 136 „ 149=13. „ 3. „ β.

Last term uncertain. End at 170.

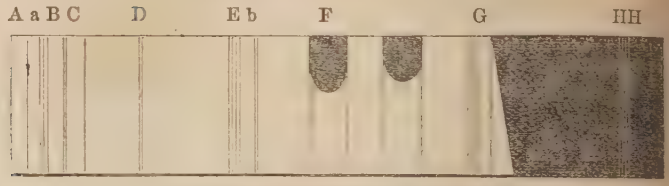


Diagram of Spectrum of Acacia leprosa.

See also Plate II., fig. 1.

Galphinia splendens.

8. *Galphinia splendens.*

1. 113 to 127=14. Int. 5. R. α.
2. 136 „ 155=19. „ 4. „ β.

Questionable third band. End at 191.

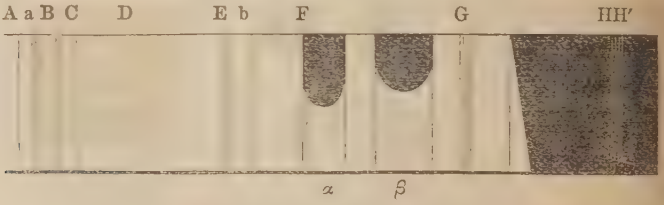


Diagram of Spectrum of Galphinia.

See also Plate II., fig. 2.

Stigmatophyllum ciliatum.

9. *Stigmatophyllum ciliatum.*

1. 115 to 129=14. Int. 4. R. α.
2. 137 „ 159=22. „ 3. „ β.

Questionable third band. End at 191.

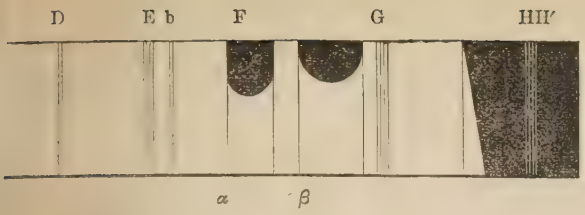


Diagram of Spectrum of Stigmatophyllum.

See also Plate II., fig. 3.

Lankasteria elegans.—Small quantity of dilute solution for ation. Lankasteria elegans.

1. 112 to 125.
2. 136 „ 155. Readings uncertain.

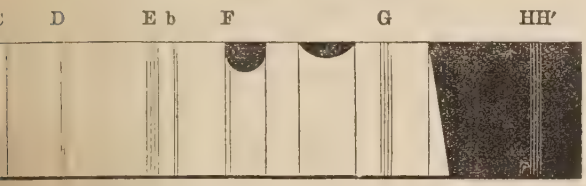


Diagram of Spectrum of Lankasteria flower.

See also Plate II., fig. 4.

Allamanda Neriifolia.—Splendid yellow flowers. Solution deep Allamanda Neriifolia.

1. 112 to 125=13. Int. 5. R. α.
2. 137 „ 157=20. „ 4. „ β.

End at 178.

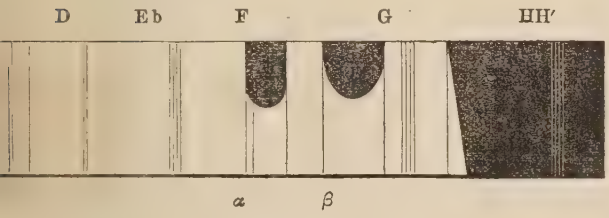


Diagram of Spectrum of Flower of Allamanda.

See also Plate II., fig. 5.

Colutea frutescens.—Solution slightly fluorescent. Colutea frutescens.

1. 107 to 119=12. Int. 3. R. α.
2. 128 „ 151=23. „ 2. „ β.

ible third band. End at 193.

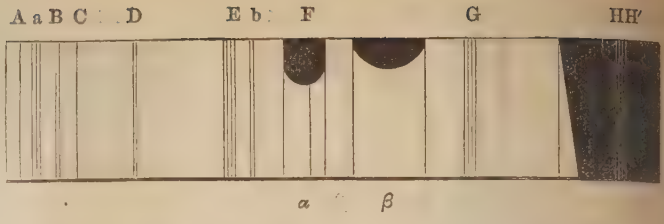


Diagram of Spectrum of Colutea frutescens.

See also Plate II., fig. 6.

Tagetil lucida.

13. *Tagetil lucida.*—Solution slightly fluorescent (?); becomes brilliant by heating.

1. 105 to 120=15. Int. 4. R. *a*.
Cut off at 130.

Diluted + 1 a second band appears.

2. 131 to 145=14, questionable.
End at 158.

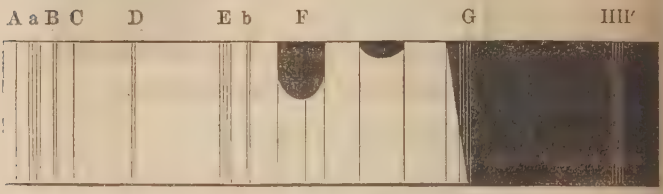


Diagram of Spectrum of Tagetil.

See also Plate II., fig. 7.

Schkuria atrovirens.

14. *Schkuria atrovirens.*—Very pale violet. Absorptions at minimum.

1. 108 to 123=15. Int. 1.
2. 130 „ 151=21. „ 1.
End at 190.

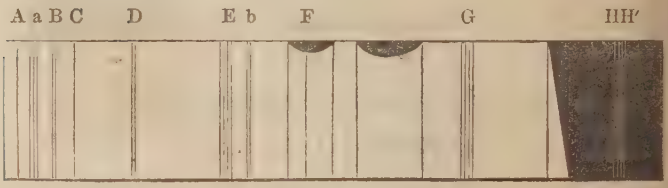


Diagram of Spectrum of Schkuria.

See also Plate II., fig. 8.

Diplotaxis tenuifolia.—Very pale yellow solution.

1. 113 to 124=11. Int. 2. R. α.
2. 131 „ 148=17. „ 2. „ β.

End at 185.

Diplotaxis tenuifolia.

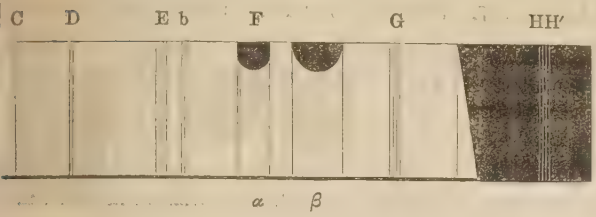


Diagram of Spectrum of Diplotaxis.

See also Plate II., fig. 9.

Virgilia sylvestris.—Very pale yellow.

Virgilia sylvestris.

1. 114 to 125=11. Int. 3. R. α.
2. 135 „ 153=18. „ 2. „ β.

Questionable third. End at 197.

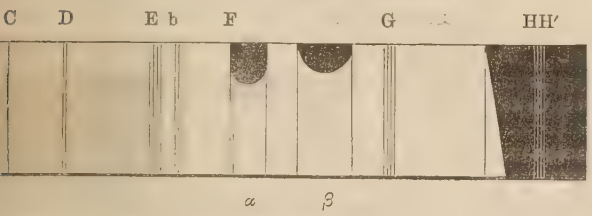


Diagram of Spectrum of Virgilia.

See also Plate II., fig. 10.

Oenothera grandiflora.

Oenothera grandiflora.

1. 102 to 126=24. Int. 3. R. α.
2. 135 „ 156=21. „ 2. „ β.

End at 178.

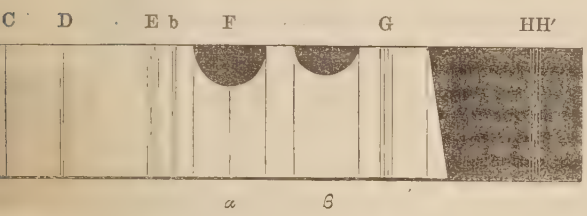


Diagram of Spectrum of Oenothera.

See also Plate III., fig. 1.

18. *Verbascum phlomoides.*—Deep yellow solution. Cut off at 100. Diluted +1.

1. 112 to 133=21. Int. 6. R. *α.*
2. 140 „ 163=23. „ 5. „ *β.*

End about 187. Diluted + 3 at 190. Bands then become very pale.

Verbascum phlomoides.

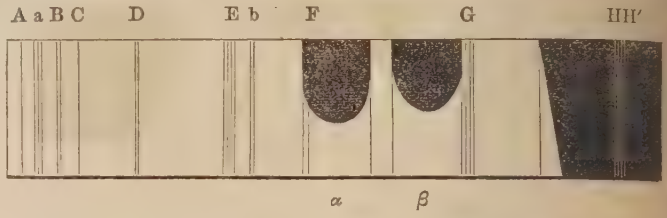


Diagram of Spectrum of Verbascum.

See also Plate III., fig. 2.

Tagetil pumila.

19. *Tagetil pumila.*—Solution turbid.

1. 113 to 125=12. Int. 5. R. *α.*
2. 133 „ 152=19. „ 2. „ *β.*

End at 170.

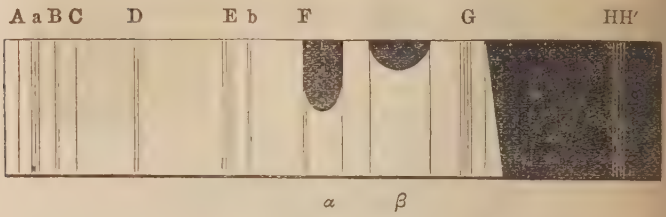


Diagram of Spectrum of Tagetil.

See also Plate III., fig. 3.

Helenium autumnale.

20. *Helenium autumnale.*

1. 107 to 122=15. Int. 5. R. *α.*
2. 132 „ 152=20. „ 4. „ *β.*

Dilution produces a suspicion of a third band. End at 190.

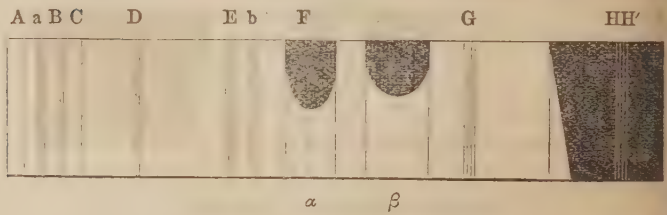


Diagram of Spectrum of Helenium.

See also Plate III., fig. 4.

. *Linosyris vulgaris.*—Cut off at 108. Diluted + 1.

1. 110 to 125=15. Int. 5. R. α.
2. 135 „ 157=22. „ 3. „ β.

Diluted + 2, suspicion of third band. End at 185.

Linosyris vulgaris.

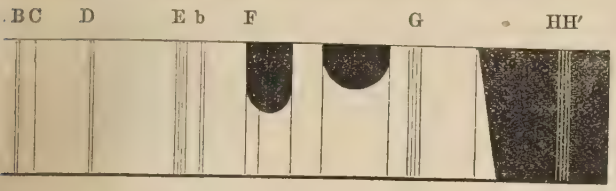


Diagram of Spectrum of Linosyris.

See also Plate III., fig. 5.

. *Solidago serotina.*—One band appearing diluted + $\frac{1}{2}$.

Solidago serotina.

1. 111 to 124=13. Int. 5. R. α.
2. 134 „ 157=23. „ 3. „ β.

Cut off at 164. Diluted + 3 ends at 185.

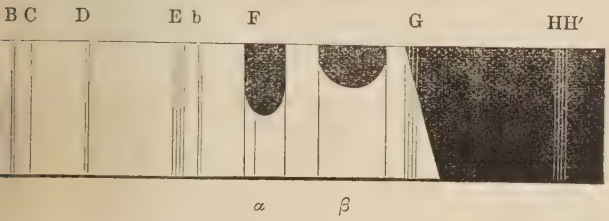


Diagram of Spectrum of Solidago.

See also Plate III., fig. 6.

Ruta graveolens.

Ruta graveolens.

1. 110 to 125=15. Int. 3. R. α.
2. 133 „ 158=25. „ 3. „ β.

End at 172. Diluted + 1 ends at 185.

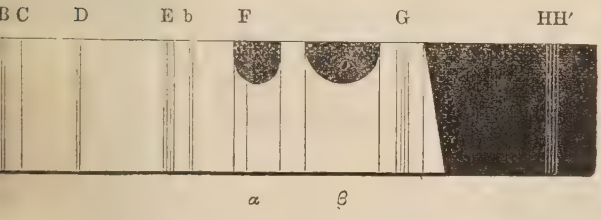


Diagram of Spectrum of Ruta.

See also Plate III., fig. 7.

Melilotus elegans.

24. *Melilotus elegans.*

1. 112 to 125=13. Int. 3. R. α.
2. 135 „ 157=22. „ 2. „ β.

End at 165. Diluted+1 ends at 188.

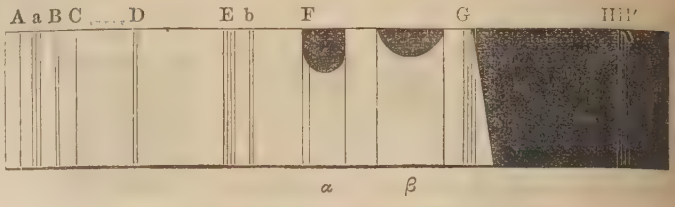


Diagram of Spectrum of Melilotus.

See also Plate III., fig. 8.

Medicago elegans.

25. *Medicago elegans.* — Very dilute solution, layer of 2 ctrs. required.

1. 113 to 126=13. Int. 2. R. α.
2. 135 „ 154=19. „ 2. „ β.

Ends at 163.

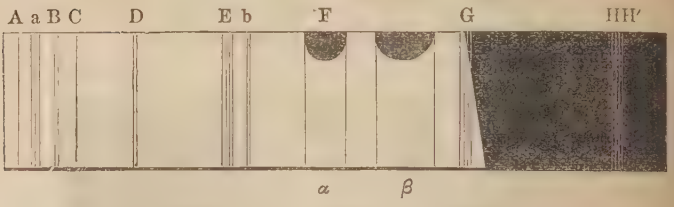


Diagram of Spectrum of Medicago.

See also Plate III., fig. 9.

Allamanda Hendersonii.

26. *Allamanda Hendersonii.*

1. 113 to 125=12. Int. 3. R. α.
2. 134 „ 158=24. „ 4. „ β.

Cut off at 165.

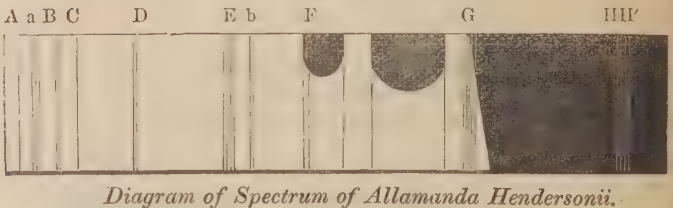


Diagram of Spectrum of Allamanda Hendersonii.

See also Plate III., fig. 10.

In the foregoing I have described all the varieties of luteine yielding two-band spectra which I have been able to meet with in *flowers* during the month of September 1868. I have ranged amongst them all those in which a third band might have been suspected but could not be shown to exist. In the following I am going to describe a series of two-band spectra from other parts of plants, particularly *berries* and *seeds*.

Spectra of berries and seeds.

Asparagus officinalis.

27. *Asparagus officinalis.*—Those who remember the learned essay of the celebrated anatomist Fallopia on the asparagus, will think it fitting that

for scientific contemplation should be drawn also from the berries is remarkable plant. The red berries were rubbed with alcohol in ortar, and the seeds removed. A yellow solution formed, but the oloured matter appeared to remain insoluble. The spectrum of this ion was cut off at 115; there was a haze all over the region of blue. matter was now boiled with water, and after 24 hours filtered. e coloured matter had dissolved. The red residue was now treated *warm* alcohol, and yielded all colouring matter easily to the boiling . On cooling a portion of the matter deposited in red flakes. trum of the solution:

1. 110 to 128=18. Int. 3. R. α.
2. 138 „ 156=18. „ 3. „ β.

Possible third band. End at 195.

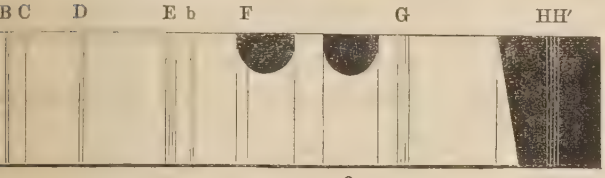


Diagram of Spectrum of Asparagus Berries.

Compare also Plate IV., fig. 1.

Physalis Alkekengii.—The husk of the berry is a wide red bag. Physalis Alkekengii.

1. 104 to 120 =16. Int. 3. R. α.
2. 129 „ uncertain=18. „ 1. „ β.

Solution 2 ctrs. thick. No bands in layer of ctr.

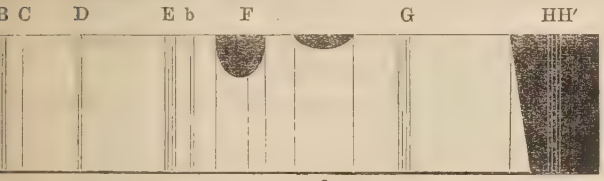


Diagram of Spectrum of Husk of Physalis Berry.

See also Plate IV., fig. 2.

Solanum Dulcamara Berries.—Solution saturated yellow to orange. Solanum Dulcamara.

1. 107 to 122=15. Int. 2. R. α.
2. 128 „ 151=23. „ 2. „ β.

Suspected third. End at 190.

Diagram of Spectrum of Solanum Dulcamara Berries.

Compare Plate IV., fig. 3.

30. *Solanum Capsicastrum Berries.*—Pale yellow solution. *Fluo*
resces distinctly, and in that respect is the only yellow substanc
showing detached bands which I have met with.

1. 106 to 120. Very pale } Solution 3 ctrs.
2. 130 „ 149. do. } thick.

Ends at 188.

Solanum capsicastrum.

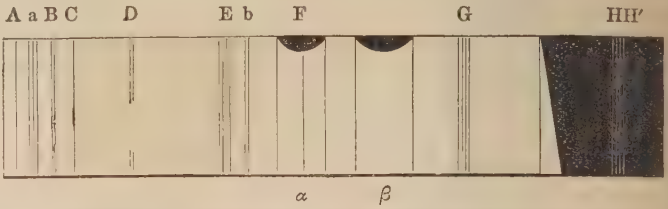


Diagram of Spectrum of Solanum Capsicastrum Berries.

See also Plate IV., fig. 4.

Cyphomandra betacea.

31. *Cyphomandra betacea.*—Large oval berry. Solution pale yellow
Layer 3 ctrs. thick.

1. 103 to 114=11. Int. 3. R. α.
2. 125 „ 145=20. „ 2. „ β.

Ends at 163.

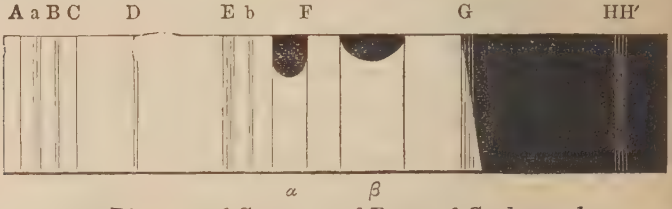


Diagram of Spectrum of Berry of Cyphomandra.

See also Plate IV. fig. 5.

Cratægus cnut Galli.

32. *Cratægus cnut Galli Berries.*—Red solution 2½ ctrs. thick. Cu
off at 97.

1 ctr. thick pale yellow, shows spectrum:

1. 102 to 114. Int. 1.
2. 124 „ 142, „ 1.

Ends at 180.

2 ctrs. thick it shows spectrum:

1. 100 to 116 = 16. Int. 4. R. α.
2. 124 „ 148 = 24. „ 3. „ β.

Ends at 160.

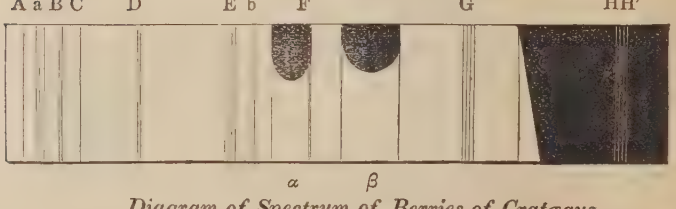


Diagram of Spectrum of Berries of Cratægus.

See also Plate IV., fig. 6.

33. *Pyrus Aria Berries.*—Yellow solution, 2 ctrs. thick.

1. 103 to 118 = 15. Int. 4. R. α.
2. 126 „ 147 = 21. „ 3. „ β.

Ends at 163.

With a layer of 1 ctr. thick bands disappear and end at 190.

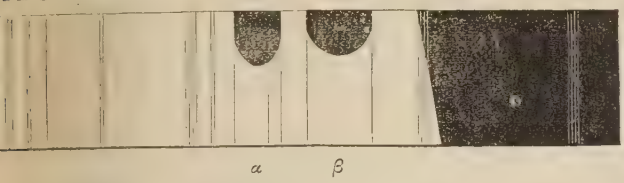


Diagram of Spectrum of Berries of Pyrus Aria.

See also Plate IV., fig. 7.

Zea Mais.

34. *Zea Mais or Indian Corn;* Seeds.—The powdered seeds treated with warm alcohol yielded a golden yellow solution which became turbid on cooling; it shed a deposit on standing and then was clear. The very concentrated solution showed red and yellow, and was cut off at 165. First probable band on slight dilution, 105 to 123. More dilute solution, 1. 107 to 118; 2. 128 to uncertain. A more clear but more dilute solution 2 ctrs. thick showed, 1. 107 to 118; 2. 128 to 147. Ultimately the following measurements were adopted as final:

1. 108 to 122 = 14. Int. 2. R. α.
2. 128 „ 148 = 20. „ 2. „ β.

Last line difficult to read and somewhat doubtful.

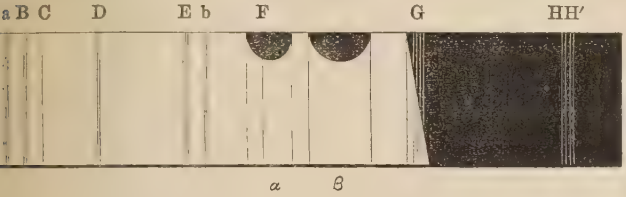


Diagram of Spectrum of Maize Seeds.

See also Plate IV., fig. 8.

These bands, therefore, are the same almost as those of the alcohol solution of ovario-luteine, which read—

1. 107 to 120.
2. 128 „ 149.

There is a matter contained in the extract of the seeds which absorbs entirely the violet end where a third band might possibly appear, and which appear in the animal, and some vegetable luteine solutions.

d.

Three-banded Luteine Spectra.

Three-banded luteine spectra.

I pass now to a series of vegetable spectra which most closely resemble the spectra of animal luteine already described. In some of them the

third band is less distinct than in the animal luteines, in others i more distinct, and the whole of the three-banded spectra have there on plate IV., fig. 9 and 10, plate V., fig. 1 to 10, and plate V fig. 1 to 3, been arranged in accordance with this progression distinctness.

Common carrot, Carotine.

Daucus carrota, Common carrot-root.—The colour of the carro due to a particular matter termed *carotine*, $C_{18}\,H_{24}\,O$. It is redd brown in crystals, crystallises in cubes, smells like the Florentine vio root, and with concentrated sulphuric acid becomes blue, and dissol with the same colour. However similar, therefore, the spectrum carotine may be to that of the animal luteines, its chemical proper seem to be different. Carotine heated to 150 becomes reddish-bro and in that state is the substance to which so-called cichory, or chic owes its tinctorial qualities and fraudulent use.

Some carrots were scraped and extracted with warm alcohol. yellow solution on cooling became opaque and was again filtered.

1. 103 to 120 = 17. Int. 5. R. α.
2. 128 „ 149 = 21. „ 5. „ β.

End at 160. Dilution + 1 extended violet to 197, and there appe a feeble band.

3. 165 to 180 = 25. feeble 5 R. γ.

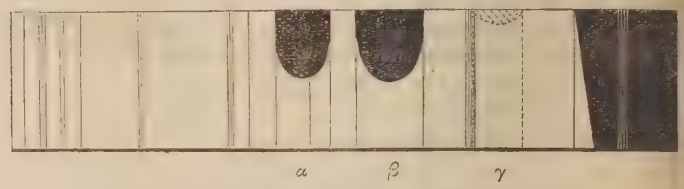


Diagram of Spectrum of Common Carrot.

See also Plate IV., fig. 9.

Bixa orellana, or Annatto.

Annatto, or *Orlean*, the flesh of the fruit of *Bixa orellana*, a S American tree. It occurs in trade as a plastic red paste. It con perhaps two colouring matters, of which *orelline* is the least ch terised. *Bixine* is the main dyeing ingredient; it is little solubl water, easily in alcohol and ether, with orange colour. Concentr sulphuric acid colours it *blue*, next *violet*; nitric acid changes it to g ultimately yellow. A concentrated alcohol solution of orange c cut the spectrum off at 77. On dilution the absorption gradually rec towards 89, further to 92. When more diluted, so that the sol was yellow, absorption receded to 103. Again diluted to light yell spectrum of bands appeared :

1. 105 to 121 = 16. Int. 5. R. α.
2. 132 „ 148 = 16. „ 4. „ β.
3. 167 „ 178 = questionable.

Blue to 203.

At a particular dilution, with strongest Drummond's light I meas finally—

1. 106 to 124 = 18. Int. 5. R. α.
2. 129 „ 153 = 24. „ 5. „ β.
3. 162 „ 181 = 19. „ 1. „ γ.

End at 205.

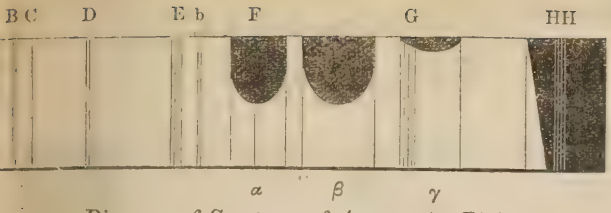


Diagram of Spectrum of Annatto, or Bixine.
See also Plate IV., fig. 10.

nnatto is used for dyeing silk. Most English cheese is dyed with
tto and turmeric.

alendula officinalis, Common Marigold.—The cold alcoholic extract a splendid yellow colour. Like the extract of calceolaria, the concen- d solution cuts the spectrum off at blue. Diluted there appears— Calendula, Marigold.

109 to 123 = 14. Int. 3. R. γ. Sharply cut off at 127. On dilu- second band appears, which has now treble the strength of the first, h latter becomes int. 2.

129 to 146 = 17. Int. 5. R. α.
156 „ 177 = 21. „ 5. „ β.

End at 189.

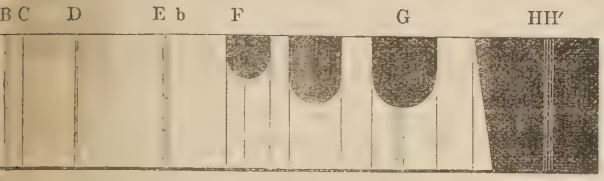


Diagram of Spectrum of Flower of Marigold.

gain diluted band 1 almost disappears, and 2 and 3 remain of 2. In this spectrum the three bands are most distinct, but the bution of intensity is most peculiar.

rysopsis villosa. Chrysopsis villosa.

1. 109 to 120=11. Int. 8. R. α.
2. 131 „ 154=23. „ 5. „ β.

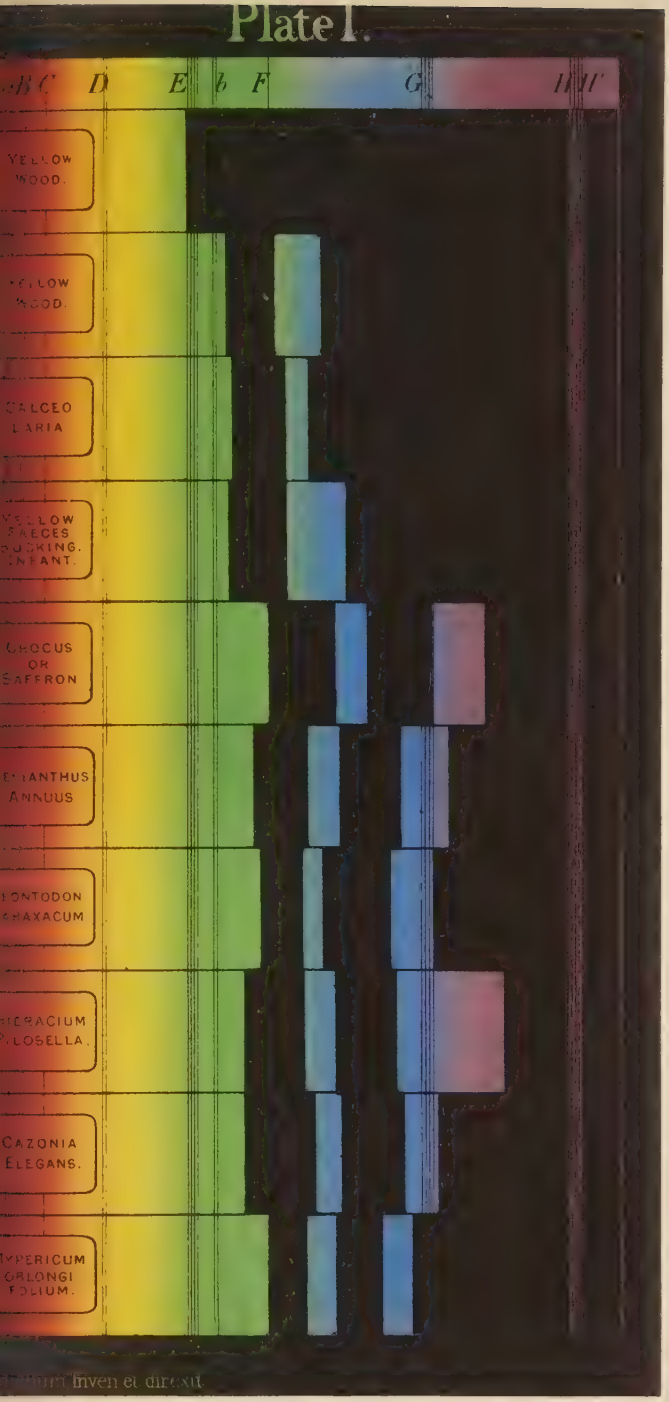
luted + 1 there appears—

3. 167 to 183=16. „ 1. „ γ.

End at 200.

Diagram of Spectrum of Chrysopsis Flower.

Plate I.



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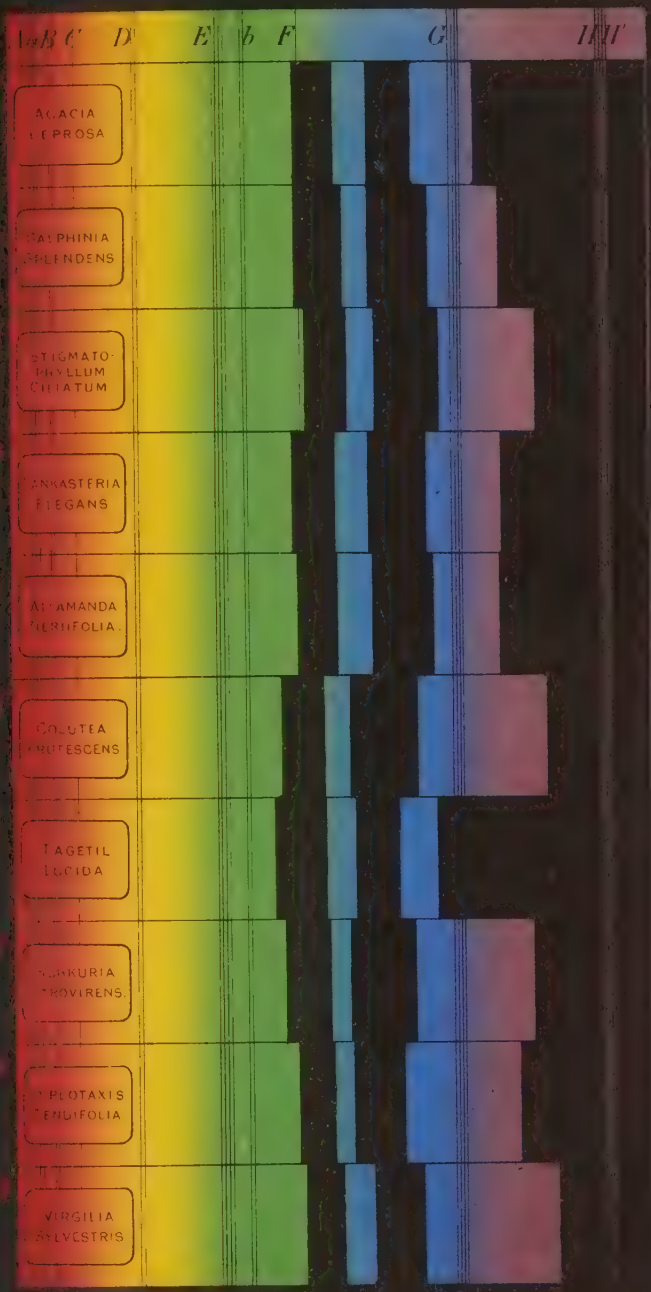
Vincent Brooks, Day & Son, Lith. London, W.C.

Platell.



...rum, inven. et direxit.

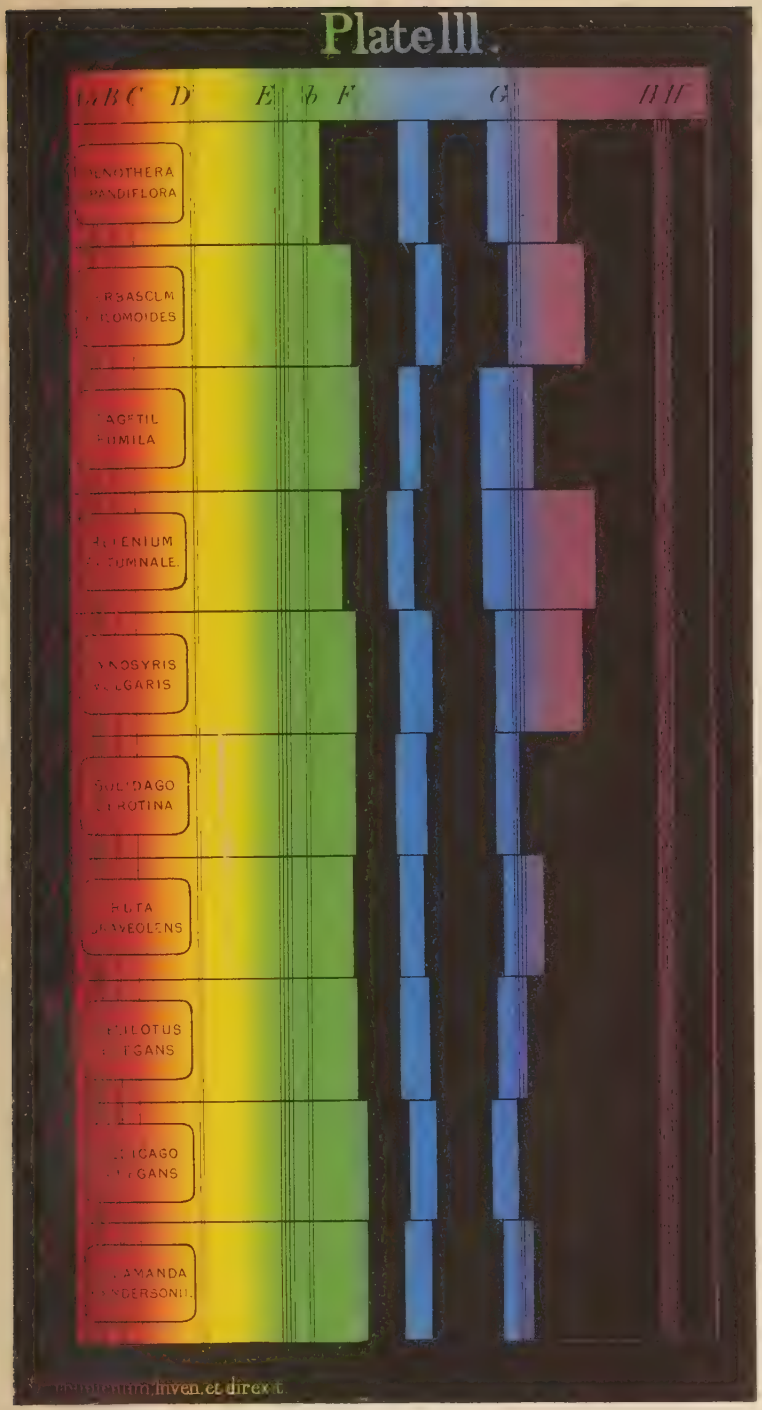


Plate III.
A B C D E b F G H
ENOTHERA
ANDIFLORA
RGASCUM
OMOIDES
AGETIL
UMILA
ENIUM
UMINALE
OSYRIS
LGARIS
OLIDAGO
ROTINA
UTA
AVEOLENS
LOTUS
GANS
ICAGO
GANS
AMANDA
NDERSONII

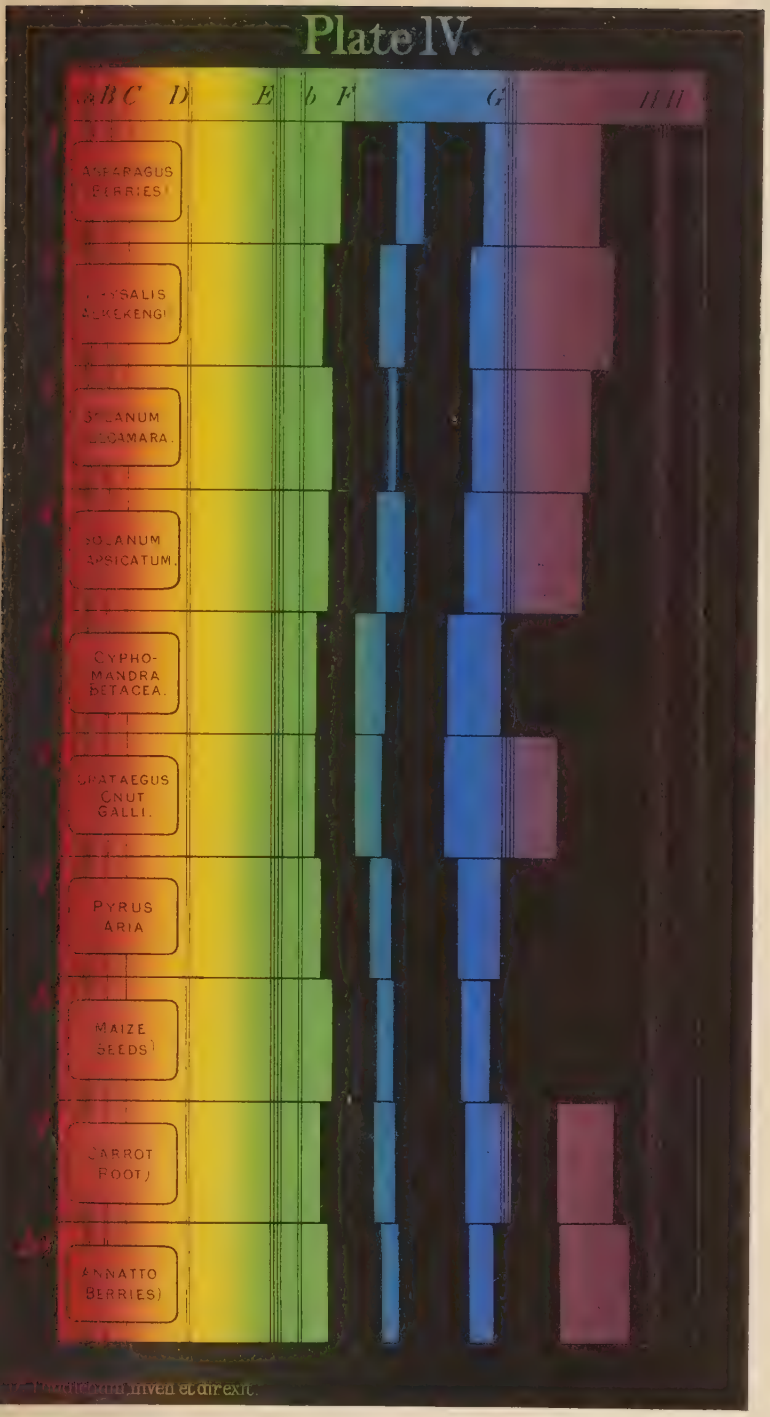


Plate IV.
a B C D E b F G H I
ASPARAGUS BERRIES
PHYSALIS ALKEKENGI
SOLANUM DULCAMARA.
SOLANUM CAPSICATUM.
CYPHO-MANDRA BETACEA.
CRATAEGUS CNUT GALLI.
PYRUS ARIA
MAIZE SEEDS
CARROT ROOT
ANNATTO BERRIES

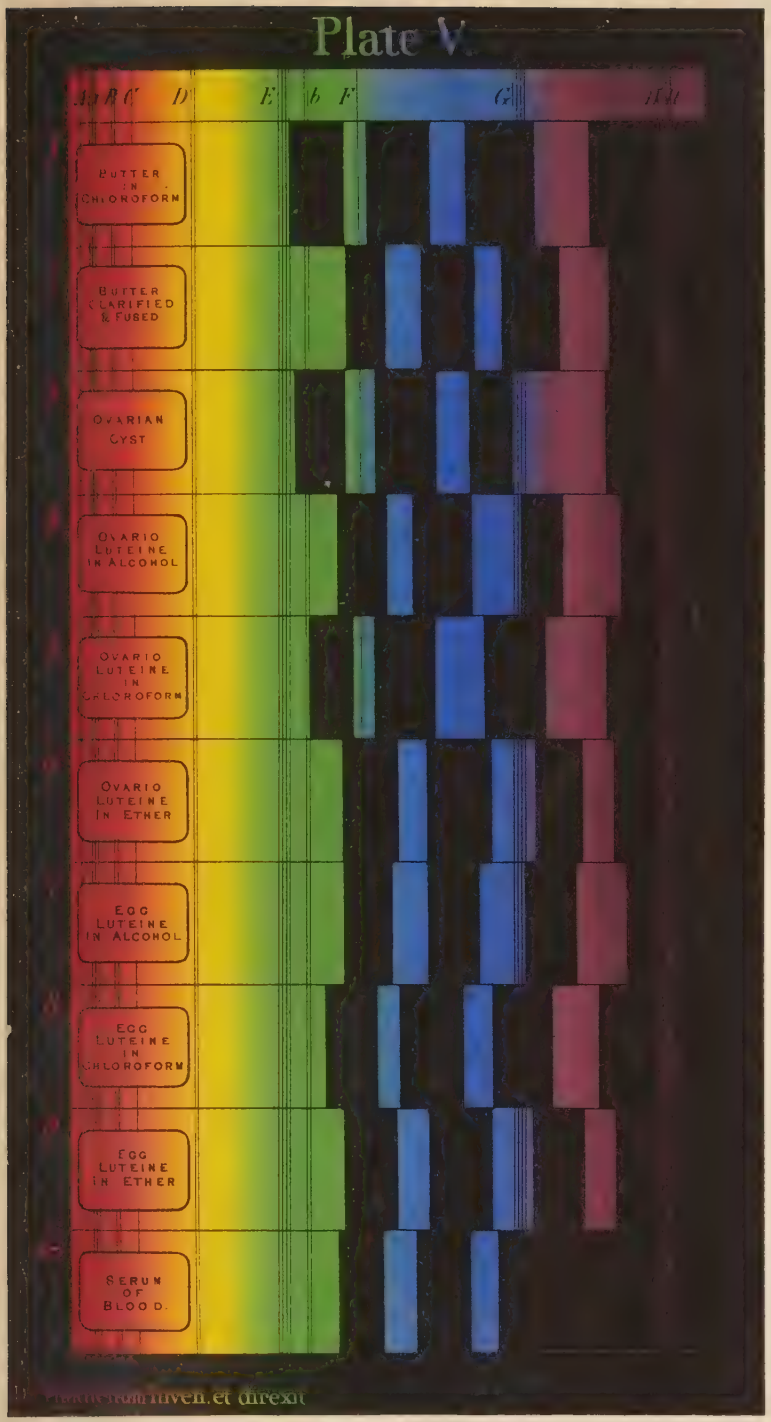


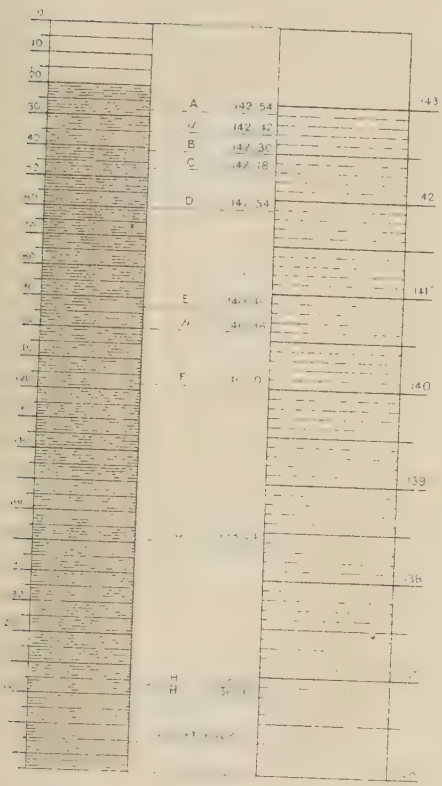
Plate V.
A a B C D E b F G H
Butter in Chloroform
Butter Clarified & Fused
Ovarian Cyst
Ovario Luteine in Alcohol
Ovario Luteine in Chloroform
Ovario Luteine in Ether
Egg Luteine in Alcohol
Egg Luteine in Chloroform
Egg Luteine in Ether
Serum of Blood.

Vincent Brooks, Day & Son, Lith. London, W.C

hudichum Inven et Direxit. J. Buckley Print

Thudichum Juvet et Dirept

COMPARISON OF FORMER AND PRESENT SPECTRO-SCOPICAL SCALES.



FIRST REPORT

OF THE

ROYAL SANITARY COMMISSION,

WITH THE

MINUTES OF EVIDENCE

UP TO

5th August 1869.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1869.

[Price 5s.]

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1870.

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COMMISSION.

VICTORIA R.

Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, to Our right trusty and well-beloved Councillor Charles Bowyer Adderley; Our right trusty and right well-beloved Cousin Charles, Earl of Romney; Our right trusty and right well-beloved Cousin and Councillor Henry John, Earl of Ducie; Our right trusty and well-beloved Councillor Robert Montagu (commonly called Lord Robert Montagu); Our right trusty and well-beloved Councillor Russell Gurney, Recorder of Our city of London; Our right trusty and well-beloved Councillor Stephen Cave; Our trusty and well-beloved Sir Thomas Watson, Bart., Doctor of Medicine; Our trusty and well-beloved Charles Brisbane Ewart, Esq., Lieutenant-Colonel in Our Corps of Royal Engineers; Our trusty and well-beloved John Robinson McClean, Esq., Civil Engineer; Our trusty and well-beloved Samuel Whitbread, Esq.; Our trusty and well-beloved John Tomlinson Hibbert, Esq.; Our trusty and well-beloved Evan Matthew Richards, Esq.; Our trusty and well-beloved George Clive, Esq.; Our trusty and well-beloved Francis Sharp Powell, Esq.; Our trusty and well-beloved Benjamin Shaw, Esq.; Our trusty and well-beloved James Paget, Esq., Fellow of the Royal College of Surgeons; Our trusty and well-beloved Henry Wentworth Acland, Esq., Doctor of Medicine; Our trusty and well-beloved Robert Christison, Esq., Doctor of Medicine; Our trusty and well-beloved William Stokes, Esq., Doctor of Medicine; Our trusty and well-beloved John Lambert, Esq.; and Our trusty and well-beloved Francis Thomas Bircham, Esq., greeting:

Whereas We did, by warrant under Our Royal sign-manual, bearing date the twenty-fourth day of November one thousand eight hundred and sixty-eight, appoint Our right trusty and well-beloved Thomas George, Baron Northbrook (since resigned), together with the several noblemen and gentlemen therein named, to be Our Commissioners to inquire into the operation of the sanitary laws for towns, villages, and rural districts in Great Britain and Ireland, and into the several matters and things in such Warrant at large set forth:

Now know ye, that We have revoked and determined, and do by these presents revoke and determine the said warrant, and every matter and thing therein contained:

And whereas We have deemed it expedient that a new Commission should issue to inquire into and report on the operation of the sanitary laws in England and Wales, with the exception of the city of London and the liberties thereof, and all places under the jurisdiction of the Metropolitan Board of Works appointed under the Metropolis Management Act, 1855, so far as these Laws apply to Sewerage, Drainage, Water Supply, removal of Refuse, control of Buildings, prevention of Overcrowding, and other means of promoting the Public Health:

Also to inquire into and report upon the operation of the Laws for preventing the introduction and spreading of Contagious and Infectious Diseases, and Epidemics affecting the health of Man:

Also to inquire into and report upon the administration of the aforesaid Sanitary Laws, including in such inquiry and report the constitution of the Central and Local Authorities charged with the administration of such Laws, and the formation of Areas proper to be controlled by Local Authorities.

Also to inquire into and report upon the operation of that part of the Registration System which relates to Certificates of Causes of Death.

Also to suggest improvements in all or any of the matters aforesaid, and means proper for carrying into effect the suggested improvements.

Now know ye, that We, reposing great trust and confidence in your knowledge and ability, have authorized and appointed, and do by these presents authorize and appoint you the said Charles Bowyer Adderley; Charles, Earl of Romney; Henry John, Earl of Ducie; Robert Montagu (commonly called Lord Robert Montagu); Russell Gurney; Stephen Cave; Sir Thomas Watson; Charles Brisbane Ewart; John Robinson McClean; Samuel Whitbread; John Tomlinson Hibbert; Evan Matthew Richards; George Clive; Francis Sharp Powell; Benjamin Shaw; James Paget; Henry Wentworth Acland; Robert Christison; William Stokes; John Lambert; and Francis Thomas Bircham, to be Our Commissioners for the purposes aforesaid.

And for the better effecting the purposes of this Our Commission, We do by these presents give and grant to you, or any five or more of you, full power and authority to call before you, or any five or more of you, such persons as you shall judge necessary, by whom you may be the better informed of the truth on the subjects herein submitted to your consideration, and every matter connected therewith, and also to call for, have access to, and examine all such official books, documents, papers, and records, as may afford the fullest information on the subject of this Inquiry; and to inquire of and concerning the premises by all other lawful ways and means whatsoever.

And Our further will and pleasure is that you, or any five or more of you, do report to us with all convenient speed, under your hands and seals, your opinion on the several matters herein submitted for your consideration, with power, from time to time, to make a separate report in respect of any of the matters aforesaid on which it may seem expedient to you so to report:

And We do further will and command, and by these presents ordain, that this Our Commission shall continue in full force and virtue, and that you, Our said Commissioners, or any five or more of you, may from time to time proceed in the execution thereof, although the same be not continued from time to time by adjournment;

And for your assistance in the execution of these presents, We have made choice of Our trusty and well-beloved William Hornby Birley, Esq., Barrister-at-Law, to be Secretary to the said Commission, whose services and assistance We require you to use from time to time, as occasion may require.

Given at Our Court at St. James's, the twentieth day of April 1869, in the Thirty-second Year of Our Reign.

By Her Majesty's Command,

(Signed) H. A. BRUCE.

FIRST REPORT.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

We, Your Majesty's Commissioners appointed to inquire into and report on the operation of the Sanitary Laws in England and Wales, with the exception of the City of London and the Liberties thereof, and all places under the jurisdiction of the Metropolitan Board of Works, appointed under the Metropolis Management Act, 1855, so far as these laws apply to sewerage, drainage, water supply, removal of refuse, control of buildings, prevention of overcrowding, and other means of promoting the public health. Also to inquire into and report upon the operation of the laws for preventing the introduction and spreading of contagious and infectious diseases, and of epidemics affecting the health of man. Also to inquire into and report upon the administration of the aforesaid Sanitary Laws, including in such inquiry and report the constitution of the central and local authorities charged with the administration of such laws, and the formation of areas proper to be controlled by local authorities. Also to inquire into and report upon the operation of that part of the registration system which relates to certificates of causes of death. Also to suggest improvements in all or any of the matters aforesaid, and means proper for carrying into effect the suggested improvements, have held several meetings, and although we have not yet completed our inquiries, humbly beg leave to submit to Your Majesty the evidence given before us up to and inclusive of the meeting held upon the 5th day of August 1869.

(Signed) C. B. ADDERLEY,
Chairman.

August 1869.

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5. Arnold Taylor, Esq.	One of the Inspectors of the Local Government Act Office	854–892	54
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MINUTES OF EVIDENCE,

TAKEN BEFORE THE

ROYAL SANITARY COMMISSION.

Monday, 26th April 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
GEORGE CLIVE, Esq.
FRANCIS SHARP POWELL, Esq.
JAMES PAGET, Esq., F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

(1.) TOM TAYLOR, Esq., examined.

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1. (*Chairman.*) Will you state the office which you fill?—I am secretary of the Local Government Act Office, in connexion with the Home Office.

2. What is the relation of the Local Government Office to the Home Office?—The head of our office is the Home Secretary, and all our official acts are done in his name and through him, the powers which we administer under the Local Government Acts and the Sanitary and Sewage Utilization Acts being functions of the Home Office.

3. Have you any other functions besides those which arise under the Acts which you have named?—We have none which are imposed upon us by Acts of Parliament. We give opinions and advice on matters arising under the Nuisance Removal Acts, but that is not *ex officio*.

4. By what authority do you give advice under the Nuisance Removal Acts?—We do so because those matters come naturally within the functions which are imposed upon the office by Act of Parliament.

5. How long have you been connected with the office which you now occupy?—I began to work with the General Board of Health early in 1850. I have been acting ever since, without intermission, in the same work, in connexion with either the General Board of Health or the Local Government Act Office.

6. Is it a fact that the Board of Health ceased to exist in the year 1858, and that the Local Government Act Office commenced from that period?—The General Board of Health existed until 1854 in the form in which it was originally constituted, namely, a board consisting of the head of the Office of Works, or the Office of Woods and Works as it was then, an unpaid member and two paid members. In 1854 the original board expired and was succeeded by a board constituted of a president and *ex-officio* members, namely, the President and Vice-President of the Board of Trade, and the Principal Secretaries of State. That board continued to act from 1854 to 1858 when the distinct existence of the General Board of Health ceased, and its functions were transferred to the Home Office. From that time the work which we have done has been done through the Home Office, and as part of the work of the Home Office.

7. So that the change in 1858 was to transfer the central authority from the Board of Health to the Home Office?—Yes.

8. And at that period the Local Government Act Office began to exist?—Yes, under that name; it continued in the same premises which it had occupied under the name of the General Board of Health, but its work has been done under the name of the Local Government Act Office from the year 1858.

9. So that you have not only been at the head of the Local Government Office ever since it first existed, but you are also acquainted with the proceedings relating to the Board of Health?—Yes, from 1850, in fact, continuously.

10. Will you state what have been the principal changes within your experience in the administration of these Acts?—As regards the central authority, I have already pointed out the principal change, namely, in 1854 from an office consisting of four members to one consisting of a single member, while in 1858 there was a total extinction of the separate General Board of Health, and a transfer of its work to the Home Office. From that time the Acts have continued to be administered by the Home Office. I may also state that within that time the Burial Acts have come into operation, which are also administered by the Home Office.

11. Through you?—Not through me, but through a separate inspector, that is to say through a separate branch of the Home Office. The work of sanitary inspection proper, which used to be carried on by the General Board of Health, has been transferred to the Medical Department of the Privy Council, which was created in 1858. Then a very important change in the central administration of sanitary law took place in 1866 when, what is called the Sanitary Act of 1866 was passed, the 49th section of which gives an appeal to the Home Secretary in all cases of default by local authorities administering general Acts for purposes of local improvement, whether the Local Government Act, the Sanitary Act, or the Nuisances Act.

12. Is the Act to which you have just referred the only Act which gives an appeal to the Home Secretary?—There are specific appeals on special points under the Local Government Act, but that is the only Act which gives a general appeal.

13. When you refer to the Burial Acts and the medical department, am I to understand you to say that with reference to those two particular subjects

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the Home Office has a direct relation to them from the old Public Health Office?—The Burial Acts department was created by the original Burial Acts, and the General Board of health prepared those Acts, and conducted the inquiry which led to them, but the administration of those Acts was always vested in the Home Office. The duties of the medical department of the Privy Council were originally discharged by the general board of health, in so far as they were discharged at all; so that there was a change. The duty of conducting appeals in cases of default by local authorities was created by the Sanitary Act of 1866. There were two Acts, which were called Sewage Utilization Acts, passed in 1865 and 1867, which give powers to the Secretary of State to sanction loans for works of sewerage, and which constitute certain local authorities with powers to raise such loans, and to carry out sewerage works all over the country. Those two Acts in effect give to some local body in every part of the country the same powers as a local board, under the Local Government Act for sewering their district, and for borrowing money for that purpose.

14. I understand that there is a division of the central authority at present existing over the different sanitary subjects, including medical; the medical branch being under the Privy Council, and the sanitary branch being under the Local Government Office?—Local improvement, or default in the execution of powers for local improvement, is under the Home Office. Inquiries into cases of epidemic disease, or outbreaks of fever and similar inquiries, are conducted by the Medical Department of the Privy Council.

15. Is it your opinion that the central authority ought to embrace all these various subjects to which you have alluded, including the medical department which is now a sub-department under the Privy Council?—I think so.

16. And you see objections in practice to the division of these subjects, they being partly under one head office and partly under another head office?—I think that there are such objections.

17. Will you state generally, what are your objections to the division of these various subjects between two central authorities?—Generally, I should say that it renders necessary an amount of correspondence, backwards and forwards, between the Home Office and the Privy Council Office which is perfectly unnecessary, and which leads to waste of time, and frequently to action being taken by either department without the knowledge of the other For instance, we receive complaints from a place of the general neglect of sewerage, or of cleansing of privies and cesspools, and similar matters. At the same time the Privy Council receives a complaint of the existence of fever in that place. I will take a village called Cuckfield, a coal-mining village in the north of England, near Darlington, in which we had such a case the other day. We were charged with the duty of inquiring into the neglect of the local authority as regarded the provision of privies and the cleansing of them; the Medical Department of the Privy Council was charged with the duty of inquiring into the results of that neglect. That involved, you may say, two separate courses of proceeding, which required co-operation between us at every step in order to conduct the investigation efficiently, and yet the two inquiries being in two different offices, it was only by a special arrangement that we were enabled to go on and make inquiries together; that is to say, that the inspectors were put in co-operation, and received instructions in common, all of which should have emanated from one head. The two authorities were very likely to overlap. In the case of a place called Terling they did actually come into collision, that is to say, the medical officer of the Privy Council advised the authorities of the district, while fever existed, as to what they should do in the way of works to resist it; but our inspector found it rather necessary to check his advice. He found that cesspools were being constructed by the advice of the officer of the Privy Council which he considered were unequal to the needs of the district, and were likely to do more mischief than they were likely to cure, and there was a collision between the two departments which never would have arisen if they had been working under one head, and receiving their instructions from one source.

18. (*Mr. Clive.*) During the years following 1858, when I had the pleasure of communicating with you, did you feel your staff strong enough for the work which you had to do?—Our staff is certainly not strong enough for the work which it has now to do.

19. I refer to the years 1858, 1859, 1860, and 1861?—We felt our weakness less then than we do now, because our duties were not so large then as they are now, but our duties since then have been increasing, and our staff has not increased in proportion, in any sense.

20. You had then only two inspectors?—Yes, and we have now three, but still the three whom we have now are much less able to do the duty which at present devolves upon them than the two were then.

21. Do you not think that that difficulty of an insufficient staff might be got over by a union of the two authorities?—I am not aware that it would, because the inspectors' staff of the two offices is different. The inspectors of the medical department are doctors, and attend to the medical part of the questions into which they have to inquire, while our inspectors are engineers, and attend rather to the question of works, and sometimes incidentally to questions of law in connexion with works, and questions of boundary and outfall.

22. Is it your opinion that the union of the two offices, namely the medical department of the Privy Council and the local government department of the Home Office would not tend to an economy of labour?—It would no doubt tend to an economy of labour in the office itself; it would tend to a diminution of clerk's work and letters, and all the work of the office proper; but not to a diminution of the labours of inspection.

23. (*Lieut.-Col. Ewart.*) You have referred to a central authority, taking up the duties which are now performed by your department of the Home Office, and by the medical department under the Privy Council Office. If you had a central authority, would not that central authority also with advantage take up the Burial Acts?—That is now administered by the Home Office, and I presume that it would remain as it is now. The central authority which I have contemplated for the whole work is the Home Office, as it is now.

24. Then you would include the Burial Acts?—Yes, as they are now administered, through the Home Office.

25. You would, as I understand you, centralize all the departments under you?—I should not centralize them more than they are centralized now, but at the same time I should put them all under one central office, which is the Home Office.

26. (*Dr. Acland.*) In the working of the Diseases Prevention Act, does any question which arises under that Act come in any way under the Home Office?—No, that is now administered entirely through the Medical Department of the Privy Council. That would be a part of the duties of the Medical Department which would be transferred to the Home Office, supposing such a change to be made as I should recommend.

27. I understand with regard to the Diseases Prevention Act, that it is the Act under which the superintendence of great epidemics takes place?—Yes.

28. The medical department of the Privy Council, under that Act take entire charge of the matter?—Yes, so far as regards the medical relief and the arrangements for medical supervision. All those arrangements which arise out of the epidemic are under the central control of the medical department of the Privy Council, but are administered by the

board of guardians, that is to say, by the local authorities; but in so far as there is a central function connected with those duties it is the function of the medical department of the Privy Council. The Home Office exercises no special functions in those cases.

29. Supposing that either a medical officer sent down by the Privy Council, or the medical officer of health, or practically, the central authority of the Privy Council, thought that for the restraining of an epidemic it was necessary to undertake some large works, what must he do?—He must represent it to the local authority, who have powers for the purpose. If the works which he thought necessary were works of sewerage or of water supply, he would represent this to the sewer authority. If the place had not a corporation or body of improvement commissioners the work would belong to the vestry of the parish, or a committee of the vestry,. I will take the case of a village; he would have to represent to the vestry that the health of the place rendered necessary the construction of those works, that they had power to construct those works, and to borrow money for the purpose; that they had neglected to do so, but must not continue to neglect it, or that a complaint would be made to the Home Secretary, who would have compulsory power to act.

30. (*Mr. McClean.*) Would your scheme altogether do away with the Medical Department of the Privy Council?—Yes.

31. It would cease to exist?—It would very probably cease to exist under that name. Its duties would, in fact, be transferred to a department of the Home Office.

32. (*Mr. Powell.*) I presume that in the reconstitution which you suggest you would include any Acts affecting public health, and would transfer the powers of them to the Home Office. For example, I observe that the Alkali Act is worked by the Board of Trade?—Yes, I should do so, on the same principle.

33. (*Mr. Hibbert.*) Would you include the registration in connexion with vaccination in the transfer to the Home Office, or to any central body?—Yes, in so far as it is now conducted under the superintendence of the Medical Department.

34. Do you think that the transfer of the management of the whole of the Registration Acts would be too large?—I do not feel able to offer a suggestion on that subject from my own knowledge. I believe that at present the Registrar General's office is in connexion with the Home Office.

35. It is a separate department?—Yes, but still the Home Office is at the head of it.

36. (*Mr. Cave.*) Does the water supply of a district come under the Local Government Act Office?—The local boards have powers of water supply. If they borrowed money for that purpose they must come to the Home Office for sanction.

37. Has not the water supply of districts been taken up in some cases by the Board of Trade?—The Board of Trade have certain duties with regard to inquiries; for instance, a complaint against a water company by a certain number of householders is investigated by the Board of Trade: they exercise duties of that class.

38. Have not the Board of Trade promoted bills for the express purpose of supplying districts, such as the Lee River Bill of last year?—I am not practically aware of that; in the metropolitan district they might do so.

39. Comprising in fact the whole watershed of the River Lee?—Yes; that I presume was a duty coming to them from their connexion with the Metropolitan Water Act, and not a general function.

40. Should you not consider that that, as far as it goes, raised a certain conflict of central authority?—I should say so. It seems to me that such a duty as that would naturally fall to the Home Office, upon the same principles as those which I have already mentioned.

41. With regard to the purification of rivers, and especially the prevention of the refuse from gasworks being poured into them, have not the Board of Trade a jurisdiction over gasworks in the metropolis?—That I do not know. My duties have not led me practically to study the Metropolitan Acts; we have no duties in the metropolitan district, and therefore I am less acquainted with the Metropolitan Acts than I am with the General Acts which relate to the rest of England. The metropolis is generally legislated for specially, and it so happens that we are always excluded.

42. If you were told (which is the case) that legislation with respect to gasworks, and the inspection of gasworks, was under the Board of Trade, should you consider that that might lead to a conflict with the central authority in consequence of what, in other respects, belonged to the Local Government Office?—I could conceive such a conflict, but I may say that the size of London might render necessary special arrangements for these matters. I mean that the department for administering the matters of which we have been speaking, for the country at large, might not be able, without special machinery for the purpose, to deal with London. London is almost like a second England.

43. That would suggest another question of a different kind in making recommendations with reference to a central authority, and would be, in your mind, to recommend a central authority for all these questions for London, putting on one side the Home Office, the Board of Trade, and the Privy Council?—My recommendations must be understood as having reference to the rest of England. I have not had London in my view in what I have said, and I would rather not express an opinion upon that point. I think that persons who have had special experience of the needs of London in those matters should be examined on those points. My evidence must be understood with reference to my field of duty, which is the rest of England, and not London.

44. With respect to the water supply, leaving out London altogether, could not you imagine a great conflict of central authority in consequence of the central authority of London having to go far into the country with its jurisdiction with regard to water supply?—I can quite understand that. Indeed I may say that as respects the sewerage of London and the adjacent districts, I have very considerable experience of the difficulties which arise. The arrangements for the sewerage of London are closely calculated for the needs of the metropolitan area proper, and almost all the districts around have difficulties with regard to the outfalls, they being unable to avail themselves of the London outfalls, and at the same time finding that the London arrangements take their natural outfalls, so that all the districts surrounding London are now endeavouring to get leave to communicate with the London system of drainage.

45. Would not that point to a central authority, comprising London, rather than to having a central authority for the metropolis?—*Pro tanto* it does so.

46. With regard to animals, have you any jurisdiction in the Local Government Act office, with respect to cattle plague or kindred diseases?—None.

47. But you have, I think, a jurisdiction with regard to the diseases of animals, which arose before the cattle plague?—None. The Acts which have been administered through me have had no reference to diseases of animals at any time.

48. Have you a jurisdiction with regard to an animal which is kept in such a condition as to be injurious?—That is a nuisance. We have no authority as to that, but the nuisance authorities have jurisdiction in that case, and we might deal with it on an appeal under the 49th section of the Sanitary Act in case of default by the local authority; but that would be merely from default by them in the administration of the Nuisances Removal Act, and not as relating to an animal. If an animal was the subject of the nuisance it would be a mere accident.

49. In the case of default by the local authority in not taking notice of an outbreak of the cattle disease,

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would that come under the Local Government Act Office?—The terms of the Nuisances Removal Act are "Any animal so kept as to be a nuisance or injurious "to health," that certainly refers not to the spread of disease among animals. I presume that it means so kept as to be a nuisance or injurious to the health of human beings.

50. Then you do not think that in any case neglect on the part of a local authority under any circumstances to stop an outbreak of cattle plague, would come under the Local Government Act?—I should think not.

51. (*Lord Robert Montagu.*) With regard to the central administration of the sanitary laws, will you go seriatim through those acts, and state what office puts each of them in operation. In the first place the Quarantine Acts I believe are put into operation by the Privy Council and the Board of Customs?—Yes.

52. The Vaccination Law I believe is put into operation by the Privy Council conjointly with the Poor Law Board; the Burial Acts by one branch of the Home Office, and the Local Government Acts, for the drainage of towns and villages, by another branch of the Home Office?—Yes.

52*a*. The Nuisances Removal Act is put into operation by the Poor Law Board, is it not, through the boards of guardians?—So far as the boards of guardians are in communication with the Poor Law Board, they administer the Act. The Poor Law Board themselves have no functions except as having the general control of the boards of guardians. No central authority is named in the Nuisances Removal Act.

53. The Diseases Prevention Act is put into operation by the Privy Council, also through the boards of guardians?—Yes, generally.

54. The Alkali Works Act is put into operation by the Board of Trade?—Yes.

55. And the Sanitary Act is put into operation partly by the Home Office, and partly by the Privy Council Office, is it not?—I do not think that the Privy Council Office have any functions under the Sanitary Act. There are certain portions of the Sanitary Acts relating to certain matters which may come within the jurisdiction of the Privy Council, namely, medical matters, hospitals, and so on.

56. Do not you consider that there was a great conflict of jurisdiction between the Home Office and the Privy Council Office with regard to the case of Terling last year?—Yes, but it was a sanitary inquiry made by the medical department of the Privy Council, not under the Sanitary Act but under another Act which gives them a power of sanitary inquiry; and of course the appeal was to us under the Sanitary Act. Our inspector who went down there states that in that instance a complaint was made to the Medical Department against the guardians of the unions for neglect, and a complaint was also made to us under the 49th section. The Medical Department called our attention to it; the complaint was in fact made by the Medical Department to us.

57. Did not the Privy Council Office ask the Home Secretary to put an order in force under the Sanitary Act?—Yes, under the 49th section.

58. And did not the Home Secretary take three weeks to consider the subject, and to learn the case, before the Privy Council Office could get an answer?—It is very odd if he did so; I do not know. Perhaps on that point you will ask the inspector who went down from our office.

59. What office has the charge of Acts relating to the adulteration of food?—Certainly not ours.

60. Not the Home Office?—Not the Home Office.

61. Is not that left entirely to the local authorities?—Yes, as far as I know.

62. (*Lieut.-Col. Ewart.*) Are you aware under what central authority the Contagious Diseases Act is administered?—I imagine that it is administered under the War Office for the army, and under the Admiralty for the navy. It is a matter specially relating to the health of the soldiers and sailors.

63. If you had one central authority for health purposes would you bring the administration of the Contagious Diseases Act under it?—It would appear that there ought to be a co-operation between the army and navy departments, and that central authority in respect of that matter; but I think that that is a point upon which probably the medical officer of the Privy Council would be a better person to give evidence than I should. My special experience has not been upon medical questions, but rather upon local improvements.

64. (*Chairman.*) Supposing that all these subjects which have been mentioned were placed under one central authority, namely, the subjects of Local Sanitary administration, Nuisances Removal, Sewage Utilization the Medical Department including Quarantine, and likewise Diseases Prevention, and other subjects, I presume you would think it necessary that that central authority should have a larger staff for the purpose of superintending all these various processes?—They are all now provided for by different staffs, and the probability is that on the whole the staff would not have to be larger—the staff might even be smaller; it is a consolidation of duties, and *pro tanto* the tendency would be to diminish the office staff.

65. When you said in answer to Mr. Cave that the metropolitan administration might be too large for the Home Office to superintend, I presume that you did not by that mean to express any opinion in favour of these various administrations of the same kind throughout the country being under different departments, such as the Home Office, the Board of Trade, the Privy Council, and the Poor Law Board?—No.

66. But you meant to say that the central authority, whatever it was, must be made large enough to superintend these various administrations.—I meant to say with regard to London that if London was included it would probably necessitate an increase of staff.

67. What you meant to express was an opinion in favour of the necessity of an increase of power, but you did not express any satisfaction with the variety of central authorities under which these similar administrations are now placed.—Certainly not. The tendency of my evidence is towards unification of central authority.

68. We will now proceed to the construction of the local authorities. Will you state what change was brought about in the local authorities of towns by the Act of 1858.—That Act is the Local Government Act, namely, the Act which has taken the place of the Public Health Act of 1848, and which may be considered as the general code of Town Improvement Law. Under the Act of 1848, the General Board of Health brought the Act into operation. Where the mortality exceeded a certain proportion to the population in a certain number of years, they had power to send an inspector to hold an inquiry, and if they thought proper to put the Act in force by an Order in Council, or by a provisional order,—that is so say by an Order in Council where there were no local Acts in force, and by a provisional order where there were local Acts in force as to matters which required to be dealt with. The general board exercised that power in many cases where there was strong local opposition, and there was a great collision between the local authority and the central authority, in consequence of that power of applying the Act. Many places resisted the application of the Act, and did so successfully. Some places prevented any provisional order being even introduced into Parliament, others caused provisional orders which were introduced into Parliament to be thrown out. When the Act of 1858 was passed, the machinery for bringing it into force was changed, and the Act was no longer applied by the powers of a central authority, but it was adopted by a resolution of the locality itself, where there was a corporation, by resolution of the town council, where there was a board of improvement commissioners, by resolution of the Board of Improvement Commissioners; and in other cases, where there was no constituted local authority,

by a resolution of a public meeting, or by a poll, on such a resolution. That is the great leading distinction between the modes in which the Act of 1848 and the Act of 1858 are brought into operation. When once brought into operation a local board is elected and administers the powers of the Act.

69. From 1848 to 1858 a general board in London applied the law on these subjects to localities; but since 1858 the law has enabled localities to apply it to themselves?—Yes, that is the distinction.

70. Will you now state the various kinds of local authorities which exist in different places?—In places where the Local Government Act, 1858, or the Public Health Act of 1848 (which is part and parcel of the former) is in force, the local board is the local authority. The local board in boroughs is identical with the town council. Where the Act has been adopted by a board of improvement commissioners, although exercising powers under a local Act, that board of improvement commissioners is generally the local board. I say "generally," because in some cases a corporation exists besides a body of commissioners, so that it is not universally the case. In cases where there is neither a corporation nor a body of improvement commissioners the local board is a new body elected under the Act.

71. Then at this moment, as far as respects towns, there are three kinds of local boards, namely in some cases town councils, in some cases improvement commissioners, and in some cases bodies elected under the Acts?—Yes. They are all local boards, but in one case their duties are administered as a function of the town council, and in another case as a function of the improvement commissioners.

72. There are these three kinds of local boards?—Not exactly; they are local boards of towns in three predicaments: there are three predicaments of towns.

73. There are three kinds of towns with local boards under different circumstances?—It is rather difficult to say that. It is the same local board, but there are three predicaments of towns; the local board for boroughs is the town council; the local board for towns under improvement commissioners is the body of improvement commissioners; and the local board for towns which have neither a town council nor improvement commissioners, is a local board pure and simple.

74. (*Mr. Bircham.*) The same functions are administered by a different body?—Yes, they are all local boards; in one case the town council is the local board, in another case the improvement commissioners are the local board, and in the third case the local board is the local board pure and simple. The powers are the same, it is only a question of terms.

75. (*Chairman.*) What other sorts of local boards are there in other places?—There are boroughs which have corporations where the Local Government Act is not adopted, and where the town council exercise all the powers of local improvement, as in Manchester.

76. Those are places which have special Acts of their own?—Yes. There are also boroughs in which some powers of town improvement are exercised by the town council, and others by a body of improvement commissioners distinct from the town council. That used to be the case in almost all boroughs, but in some of the large ones the old commissioners have been extinguished, though in many they still exist.

77. What are the local authorities in the rural districts?—In the rural districts you have the board of guardians, as what is called the nuisance authority, that is to say, the board of guardians administer all the powers under the Nuisances Removal Acts; and the board of guardians is always referred to in the later law upon the subject as the nuisance authority. In parishes, townships, hamlets, and all places having a separate poor rate, and a separate highway rate, the sewer authority is the assemblage of ratepayers which has power to appoint a committee, and generally does appoint a committee, who are agents of the sewer authority, either as regards all or some of its duties, according as the delegation of powers to it by the assemblage of ratepayers is absolute and unreserved, or qualified and partial.

78. (*Lord Robert Montagu.*) The vestry, or select vestry?—Yes. That body is the assemblage of, or is selected by, the rated inhabitants. In towns the local board is the nuisance authority and the sewer authority; in boroughs the town council is the nuisance authority and the sewer authority. In towns under improvement commissions, the improvement commissionres are both the nuisance authority and the sewer authority; so that the functions of the nuisance authority, and of the sewer authority and the other functions of local improvement, are generally in the same hands except in the rural districts where the two are distinct, the one being in the board of guardians and the other in the vestry, or select vestry.

79. (*Chairman.*) In the last two answers when you alluded to the Nuisances Act did you include the Diseases Prevention Act?—No, because the Diseases Prevention Act is only put into force on particular occasions.

80. Is not the administration of that Act in the same hands as the administration of the Nuisances Removal Act?—Yes, it is everywhere in the hands of the boards of guardians. Even in towns where you have a local board, and in towns where you have a body of improvement commissioners, and in towns where you have a corporation, the authority for the execution of the Diseases Prevention Act is the board of guardians.

81. In what cases is the highway board the local board?—Wherever there is a local board under the Local Government Act the local board are *ex officio* the highway surveyors; the local board manage the roads of that district.

82. Are there any cases in which under the Nuisance Act the nuisance authorities possess the powers relating to highways?—Not now; that part of the Act has been repealed.

83. Can you give us a general idea of how you would simplify these great varieties of local boards?—Generally I may state that there has been no confusion with regard to local boards. The fact of some towns being boroughs, and some being places with bodies of improvement commissioners, and some places being without either one or the other, does not create any confusion. The local board is a local board, and you could not simplify the law as far as these matters are concerned.

84. That is to say in towns?—In towns.

85. Even in that case might you not simplify the nomenclature, by not calling the same board sometimes a local board, sometimes a nuisance authority, and sometimes a sewer authority?—Practically I do not think that any difficulty is created by that. The local boards exercise certain functions under the Nuisances Removal Act, and they are merely called the nuisance authority for general convenience; but they act as local boards. I do not think that there is any confusion from the different names, as far as regards towns. There are towns which have no local board at all, but which are under private Acts.

86. I will extend the question generally, and will ask you as to the simplification of all local authorities.—I am not prepared to say that you should extinguish the distinct local administrations existing under local Acts. You are gradually doing it, but I do not see that you need force that process more than circumstances are naturally forcing it.

87. Will you proceed to offer any suggestions which occur to you with regard to a simplification of local authorities in rural districts?—That is the greatest difficulty in all these Acts, namely, the question of what local authority is to administer them—whether the same authority or a different authority is to administer the Sewerage and Nuisance Removal Acts. I find it extremely difficult to determine in my own mind what the local authority for rural districts should be, or whether circumstances will render it possible to put all the powers, both of sewerage and of the removal of nuisances into the hands of one and the

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same local authority. The Legislature has tried both forms of authority; it has sometimes vested all the powers in the hands of guardians—at other times it has vested all the powers, as far as it could, in the hands of what you may call vestries, that is to say the parochial, as distinct from union authorities. The result has been disappointing in both cases. When you had the union authorities you found the administration of the Act in many cases neglected. You found them supine in many cases, and in other cases active. When you had the authority concentrated mainly in the hands of vestries, you found the same thing; but as the vestries were of course infinitely more numerous than the boards of guardians, and far less completely organized, you found cases of neglect bearing a larger proportion to the cases of activity, than you did amongst the boards of guardians. The guardians in many cases objected extremely to discharging these duties, so that generally, I may say, that the result of following both a system of union authorities, and a system of parochial authorities, has been one in a great degree of disappointment. You have not yet hit upon a good working authority for rural districts, and I may say that I think that it is a most difficult problem in all practical legislation to find a good working authority.

88. Have you any suggestion to make with regard to the combination of local authorities for particular objects which affect more than one locality?—I think that there is a very strong and pressing need for the power of uniting rural authorities for the purposes of sewerage, and water supply. I think that in many cases it is impossible to solve the difficulties of the problem of sewerage without a union of authorities, and that in many cases it is very difficult to bear the expense without a union of rural authorities, and that there ought to be a power vested somewhere of uniting such authorities, especially when it becomes obvious that their united action is necessary either for complete sewerage, or for proper water supply.

89. (*Mr. Clive.*) How far is the Local Government Act now adopted?—It is now very widely adopted. There are 671 districts under it, in England, of which 103 came under the Public Health Act between 1848 and 1858, and 568 came under the Local Government Act from 1858 to 1868.

90. What proportion would that be of the whole, taking towns with a population of above 3,000?—I am not prepared to say that at present, but I will have that made out. The comparison might be rather a misleading one, because a great many of our districts are not town districts proper, they are semi-rural. But even in the places where the Local Government Act is in force, there are 114 places which at the last census had a population of 3,000 or under. The total number of places under the Local Government Act, and therefore under the Local Government Act Office is 671, of which there came under the Public Health Act from 1848 to 1858, 103; and under the Local Government Act from 1858 to 1868, 568. I find that of these 387 have borrowed money for one or more of the purposes of the Act.

91. These local boards are now all corporations?—Yes.

92. In the event of there being an indisposition in any district to form a local board is there any power to compel it?—There is no power of compelling a district to form a local board.

93. And in the event of the local boards being disposed to go too far, is there any power to prevent it, for instance, in the case of sewerage?—Only indirectly; they have to come to the Secretary of State for power to borrow money.

94. (*Lieut-Col. Ewart.*) Has the central authority now any power to enforce the combination of an outlying district near at hand with an existing local authority such as a town council, which has a certain jurisdiction?—The Secretary of State has no power to enforce such a combination. If the local authorities of two adjacent districts wished to unite their districts they could do so by a provisional order, and then if the provisional order was assented to by a majority of the inhabitants of both districts added, it would become law; but if the consent of the majority of the ratepayers was refused, it could not become law, and it could not be introduced as a provisional order into a confirming bill. The Secretary of State has no compulsory power.

95. It must be an agreement on both sides and voluntary?—Yes; and it must be supported by an absolute majority of the ratepayers.

96. Are you aware whether that has been done in any cases?—Yes; it has been done in many cases; generally speaking by a small outlying population being added to the district of a local board; but in many cases where it is very much wanted, and where it has been very much urged by the most long-sighted of the population, it has been resisted by the majority. In all cases where they are afraid of its increasing their rates they resist it.

97. Has the central authority any initiatory power whatever?—It has no initiatory power properly so called; it must have a petition from the locality; sometimes it may suggest such a petition being sent up, so that practically we may become the initiatory power, and if they write to us for information as to how to set about it, we tell them what to do, but otherwise we have no such power.

98. (*Dr. Acland.*) I did not understand from you whether you think it desirable at present to take any steps for the universal adoption of the Act in all districts which have not got powers equal to those of the Sanitary Act?—I should myself prefer to leave that to the operation of circumstances, which are tending in that direction.

99. Can you state the area which you believe to be the best in the case of combination of rural districts for sanitary purposes?—If I had the power to parcel out England for these purposes I should be better able to answer your question, but I must answer it with reference to the state of things already existing.

100. The reason why I put that question was because you spoke of the awkwardness of the existing law with respect both to parishes and to unions. Have you any definite opinion as to whether either of those areas is the best, or whether you could devise a still better?—One of those areas is certainly a bad one; parishes are very old divisions of the country, and it is impossible to say how or why they were formed. Unions I presume were generally formed upon considerations of rateable value and population. In neither case of course was there any consideration of natural conditions of local improvement such as drainage, or water shed, or water supply. If one were now arranging England for purposes of local improvement, considerations of watershed and water supply are among the first which one would take into account, but they have not governed any of the existing divisions of England.

101. I understand from that answer that it is a sort of haphazard arrangement which has put the carrying out great sanitary laws into the hands of these bodies respectively, and that it may, or may not, be adequate to the purpose?—Quite so. Cities have in some degree a natural coherence—they have been formed in obedience to some law of natural convenience, situation, or watershed, or possibly water supply—but in the case of rural districts, it is, as you say, quite a matter of haphazard. Perhaps I should state for the information of the Commission that there is a power of forming new districts both under the Local Government Act, and under the Sanitary Act, that is to say, districts which have not now any existence. If the population living within any boundaries whatever can find one-tenth to petition for the settlement of boundaries for the purposes of the Local Government Act they can petition the Secretary of State, who, if he thinks the boundary locally formed a good one, may give it effect by an order published in the London Gazette, or he can reduce the boundary, and set it forth as modified, but he cannot increase it. Therefore for the purposes of the Sanitary Act he can

form a district upon petition which is not conterminous with any existing district: if the inhabitants petition him to do so, he can carve a district out of several existing parishes. If one-tenth petition in the case of the Local Government Act he forms a district, and then the ratepayers living within that boundary vote whether they will have the Act or not; he merely consolidates the placé in order that they may express an opinion as to adoption of the Local Government Act.

102. (*Mr. Clive.*) If they do not confirm his view the whole thing drops?—Yes, under the Sanitary Act the case is not the same. Upon a petition of one-tenth of the inhabitants the Secretary of State can settle a boundary, not for the purpose of the inhabitants expressing an opinion, but for the purpose of forming a district.

103. (*Dr. Acland.*) Then I understand that although there is the power now of superseding districts, which I have ventured to call haphazard districts, the carving out new districts even at the present day, rests upon the good sense and friendliness of the inhabitants without even the power of suggestion from the Central Government as to what would be the best districts?—The inhabitants form the boundary in the first instance, and the Secretary of State may modify it and reduce it, but cannot enlarge it.

104. But there is no power in the central authority of expressing the best way in its opinion of making that arrangement—you must wait for the local parties?—That is so.

105. (*Mr. Bircham.*) You have spoken of the Improvement Acts in towns, and of the jurisdiction of the Local Board in those cases. Do the Improvement Acts over-ride the Local Government Act, or *vice versâ*?—The Improvement Acts as a rule over-ride the Local Government Act, but there is a power of getting them modified by a provisional order.

106. There is no certain uniformity of jurisdiction where an Improvement Act obtains in a town?—No; until the Improvement Act is modified by an order it over-rules the general Acts in matters provided for by both.

107. And that uniformity had to be initiated by the locality?—Yes; but whenever a town having a local Act adopts the Local Government Act, it very soon comes for a modification of its local Act. We do not find practically that that is a very serious difficulty.

108. Do you always find that the areas within the jurisdiction of a board of health, and of the local trustees, are coterminous?—Not always; we have had difficulties arising from that circumstance.

109. You have spoken of the guardians in rural districts being the nuisance authority—that is not universally so is it—Has not the Sanitary Act of 1868 continued the board of guardians as the nuisance authority for certain purposes, and conferred upon the sewer authority the powers of the nuisance authority for certain other purposes?—That is so with respect to privies and cesspools.

110. Surveyors have some jurisdiction at Common Law with regard to the drains?—Yes, road drains.

111. Where the Local Government Act obtains, all jurisdiction over roads goes over to the Board of Health?—Yes.

112. And it is so probably, because it was foreseen that nuisances in drains in roads would be conveniently in the same hand as nuisances in connexion with drains generally?—Yes.

113. But in rural districts that is not so?—It is not.

114. The sewer authority has jurisdiction over drains to a certain extent, and the surveyors have that jurisdiction to another extent?—Yes.

115. Have you had any experience of difficulty where the guardians have been applied to with respect to a nuisance, which has turned out to be rather under the authority of the Board of Surveyors?—We have frequently had questions arising as to whose authority it was under.

116. The present law is, therefore, so ill defined, that it is uncertain in some instances whether a particular nuisance is within the jurisdiction of the Board of Surveyors, or within the jurisdiction of the nuisance authority, namely, the guardians?—That is to say as to which should undertake measures for its remedy?

117. Yes.—If the nuisance authority were anxious to do their duty they could in all cases get an order of the justices against the owner or occupier, according as the duty of removal lay upon one or the other; otherwise, *i.e.*, if the author of the nuisance could not be found, they could get an order from the justices to do it themselves. The case which you speak of is where one or both authorities are unwilling to do their duty.

118. But still there are divers authorities with regard to the same subject matter?—Yes.

119. Have you had any experience of cases where a district has been formed and where a parish has been in one district for the purpose of its roads, and in another district for the purpose of its poor, so that the guardians have been acting in one direction, and the board of surveyors in another?—I can easily conceive such a case, but I have not had practical experience of one.

120. You said that the action of guardians, and of vestries, respectively with regard to health matters in rural districts was unsatisfactory. Has it occurred to you to consider how that might be remedied, and what change of jurisdiction there might be?—I confess myself to be extremely puzzled on that point. I have never been able to satisfy myself upon it.

121. Have you observed that sometimes the disinclination to act arises from the desire of parties to avoid offending their neighbours, which tells against the local jurisdiction?—Very much. We continually find complaints on the part of persons who are willing to exert themselves, but dare not, for fear that they may offend the most influential man either on the board of guardians or on the vestry.

122. Whereas the principle of the Local Government Act is, that it must be invited by the locality, the principle of the Sewer Acts is that they are universally applicable and compulsory?—Yes.

123. (*Mr. Powell.*) Recent Acts of Parliament have conferred upon local authorities certain powers without their districts; do you find that practically those powers have been exercised in such a manner as to do away with the great inconvenience which arises from the boundaries being determined without reference to the watershed?—They have diminished those inconveniences.

124. Have those powers been put in force so as to be of importance?—Certainly.

125. There is one case of local authority which I did not understand you clearly to mention, namely, where you have a corporate borough, and a district beyond, do you find that there is any friction in that case?—Yes, there have been conspicuous cases of difficulty there. In one case, for instance, we had a parish adopting the Act, which included a small corporate borough; the small corporate borough would not adopt it, but the parish, including the small corporate borough, adopted it. A question of law was raised, and the adoption was held to be legal. There has been a constant conflict there in consequence. The place I refer to is Lymington, in Hampshire.

126. Do you think that anything which Parliament could do would remedy that mischief?—I doubt it, because it is so peculiar a case.

127. Have there been any cases where local boards have been erected, and where the Acts have lain dormant?—There have been one or two cases of that kind. I remember one particularly at Hitchin, where the Act has been dropped in consequence of local difficulties as to questions affecting the right of compensation, and threatened actions have led everybody in the district to refuse to become a member of the local board, and therefore the Act has fallen into

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abeyance, and a receiver has been appointed to receive the rates, and to pay the expenses of the works carried out; so that there is no local board.

128. Do you not think that there should be some provision for compelling the erection and the continuous action of a local board?—I think that something of that sort is wanted.

129. Have any complaints been made as to the mode of election. For instance, it is not necessary that there should be any register or list of voters, that is held to be discretionary in the chairman?—I have found a great many questions to arise out of the elections, and complaints by people who have imagined that it has gone unfairly with them; but I cannot say that there has been any general *consensus* in that respect. There have been many cases of individual complaint and constant cases of question and difficulty.

130. Is it not expedient to have such a change in the law as shall provide for a list of electors similar to that which exists in the case of parliamentary and municipal elections?—Improvements might be made in that respect.

131. Do you say that notwithstanding the multiplicity and confusion of local Acts, provisions exist for getting rid of them, and that those provisions are so put in force that no further legislation is neccessary?—I think that the provisional order system works to that effect, and on the whole works well to that effect.

132. And you think that no further change is required.—I think not. I think that the provisional order system, if properly carried out, works well.

133. You are of course aware that the sewer authority, as defined in the Act of 1865, means certain bodies in that schedule, and that in 1867 the same expression means the same bodies, and also the local board.—Yes.

134. Would you not do away with that anomaly?—That is one of the points which the consolidation of the Acts would bring about. Practically the inconvenience is not great, but there is an apparent confusion of the Acts which it would be desirable to amend by consolidation.

135. A parliamentary paper published in 1867 contains a list of the districts where the Public Health Act of 1848, or the Local Government Act of 1858, or both of them, have been in force, with the date when such Act or Acts were adopted, and as far as possible the population in 1861.—Yes.

136. And subsequently a report appeared from the Local Government Office carrying out that information to the present time?—We make a return every year, but we have not specifically continued this return. It would be easy to supply the information.

137. Could you supply us with the documents showing the population and the rateable value under the authority of this Act of Parliament?—I have no doubt that we could do so. A cheap little book called "The Board of Health Officers' Almanack and Guide" gives you a list of all the places, and the populations, and the officers, and so on. That book is published by Knight, of Fleet Street.

138. Could you supply us with that information?—I have no doubt that I could.

139. (*Mr. Hibbert.*) You seem to make a distinction between rural districts and towns and parishes with a separate poor rate. I suppose that rural districts are merely composed of rural districts?—I said districts having a separate poor rate, because that is the definition of a "parish." In some cases there are peculiar local divisions.

140. What do you mean by local districts?—I mean districts under the same sewer authority.

141. Do you mean a combination of parishes?—No. I meant, for instance, sometimes a chapelry, which will have a separate poor rate. Those chapelries would betreated as parishes for the purpose of sewerage, and the Sewage Utilization Acts.

142. In the case of parishes and townships with a separate authority, who are the sewer authority?—The vestry, that is to say, the body of ratepayers.

143. And who are the persons to exercise the powers of the Nuisance Removal Act?—Generally the guardians.

144. Therefore you have two different bodies in the same township.—Yes.

145. Do you know from your own knowledge whether it is not the case that those powers are very much left by boards of guardians to an individual guardian of the place?—Yes. They have power to appoint a committee, and they generally appoint a guardian of the place, who acts on behalf of the board.

146. So that it is after all done by a local person.—Yes. Very often he is an active man with reference to the particular parish.

147. In the parish is it not the case that there are several persons annually elected for different purposes? In the first instance are there not the surveyors of highways who are elected annually?—Yes.

148. What powers have they with respect to sewers or drains?—Merely the power to which Mr. Bircham alluded, over drains running by the side of or adjacent to roads.

149. Have they no power to execute any sewerage?—Not for sewerage as such; only in connexion with roads.

150. Nor to borrow money for that purpose?—None.

151. That must be done through the vestry?—Yes.

152. You have also other public officers in the parish; you have overseers who are annually elected?—Yes.

153. Would it not be possible annually to elect a board who could perform all those offices instead of having them performed separately by the different individuals. I mean that a parish should annually elect a board who should act as a board of overseers, as surveyors of highways, as the sewer authority, and as the nuisance authority. If so, would there not be a chance of getting more done than there is now by having the work performed by separate officers? There is one difficulty which suggests itself to me, and that is that in the rural districts, the farmers who are most interested in the district and the roads, are generally the people most opposed to all sanitary improvements.

154. If you had an elective board of that kind would it not be possible to have a certain number of magistrates living in the locality *ex officio* members of the board, just as they are now *ex officio* members of the boards of guardians?—I have sometimes heard it said that the *ex officio* element on a board of guardians has not made its presence sufficiently felt.

155. Are you aware that a similar authority was brought into operation under the Public Works Act in Lancashire, in the smaller districts?—I cannot speak to that practically. Mr. Rawlinson had the working of that Act, and the Commission will find that he is able to give information on that point.

156. (*Mr. Cave.*) In the rural districts, are not the justices now a quasi central authority with regard to all these Acts?—They issue orders under the Nuisances Act.

157. Cannot they compel a reluctant local authority to carry out works?—If a local authority made complaint to them, or if individuals made complaint to them, they could do so. Individual ratepayers have that right, and the justices can issue an order for the abatement of a nuisance on private premises, on complaint of an individual ratepayer, but the difficulty is that very often the local authority will not move, and unless it is a case of nuisance on private premises, no individual has a right to move, so that the execution of the Act still very much depends upon the willingness of the local authority to do its duty.

158. In the case for instance, of an open drain which ought to be covered in, could not a certain number of the inhabitants petition the justices?—No,

unless that drain existed on private premises, and then any ratepayer could make his complaint; but in the case of a public nuisance the step must be taken by the public authority, except in the case of a noxious trade. In the case of a noxious trade the nuisance authority can act on the petition of a certain number of persons, but still if the nuisance authority refuse to act, I do not know that any power, except an appeal to the Secretary of State could compel them to do so. There is an appeal to the Secretary of State.

159. Is there no power now by mandamus?—There is no statutory power; it would be a question of law.

160. In the case of the justices making an order where a nuisance existed on private premises, would they not have authority as far as those private premises went, and no further?—Yes.

161. Then, in fact, though the justices are a *quasi* authority, they are insufficient and unsatisfactory?—They must be set in motion by the local authority. I am not prepared to say that the justices do not do their work efficiently when they are set in operation.

162. Is it not impossible for them to act in exactly the same way as you, for instance, could act, in sending down orders for the abatement of nuisances generally?—Yes; they have not the initiatory power, and they must be set going.

163. By the Act of 1848, had the central board any initiatory power as far as the ordering of works to be done went, or could they only insist upon the formation of a board?—They could only enforce the powers of the Act.

164. But they could not themselves order anything to be done?—No.

165. You said that local boards could unite among themselves to form one district, or more than one, if they pleased?—Yes; on such conditions as were approved by the Secretary of State.

166. Cannot they also unite with other bodies, such as drainage trustees or turnpike road commissioners?—They cannot extinguish turnpike trustees; they can make agreements with them as to the taking upon themselves of the maintenance, repair, cleansing, &c., of parts of the roads which they control.

167. Cannot they take a portion of their territory for the purpose of drainage?—Yes, by agreement.

168. And confirmed by provisional order?—No provisional order is required in the case of an agreement with turnpike trustees.

169. You know the case of the Worthing and Lancing Road?—That is quite a special case. We have been obliged to deal with that case partly by provisional order, and partly by clauses in the confirming bill. It is a case in which it is necessary to protect certain lands from the sea.

170. It is partly for the purpose of sea defences, and partly for internal drainage?—Yes; but mainly for sea defences. That is entirely an exceptional case.

171. (*Lord Robert Montagu.*) I will put to you a case which might arise, in order to exemplify the collision which there is between the central authorities. We will suppose an emigrant ship in port and just about to sail, and an infectious disease breaking out in her. She would be under the direction of the Colonial Office by virtue of the Passengers' Acts.—Yes.

172. She would be under the Medical Department of the Privy Council by virtue of the Quarantine and Sanitary Acts, and if there was any question of sanctioning or ordering expenditure she would be under the Home Office by clause 49 of the Sanitary Act, and under the nuisance authority of the nearest part of the port by the Sanitary Act of 1866.—Yes.

173. And the ship would be liable to penalties for infringing the rules of any one of those authorities.—I do not know how far the ship could become liable. Under the 49th section of the Sanitary Act we are empowered to deal with a recalcitrant local authority.

174. (*Mr. Bircham.*) You have had no experience of that.—I have not.

175. (*Lord Robert Montagu.*) You said that a collision arose between the central and the local authorities with regard to the Act of 1848.—Yes.

176. Did you mean that it was because the application of the Act was universal?—No. It was because the central authority had power to put the Act in force by Order in Council or provisional order, and in some cases did so against the will of the local parties.

177. To remedy that the Act of 1858, which takes the power of initiating from the central authority and gives it to the local authorities, was passed.—Yes.

178. You also said that very often the local authorities who adopted the Act were supine, and in many cases they did not adopt the Act.—Yes.

179. But if all the Acts were consolidated and administered by one central authority, would not the same inconveniences arise; either there would be a conflict between the central and the local authorities, or else we should run the risk of the Act not being universally applied?—Yes, unless you made the Act compulsory instead of permissive.

180. Then if we consolidate the Acts and give the administration of them to one central authority, we shall still require something else which shall evade these two difficulties?—The Sanitary and Sewage Utilization Acts now in force, give to all local authorities in towns great powers for sewerage and water supply, and impose upon them duties with respect to those things which put them on an equal footing with boards under the Local Government Act as to some most important powers. Every local authority in towns is already under some of the most weighty obligations which would be laid upon it by the Local Government Act.

181. These powers are not put in force by the local authorities very often, are they?—No.

182. And, therefore, we should require a third power in order to get these Acts put in force?—Yes.

183. Something which should have the nature of a superior authority to compel the local authorities to exertion, and which should also act as a buffer to prevent a collision between the central and the local authorities?—Yes, if you could contrive something of that sort.

184. You have spoken of the necessity of the union of local authorities for sewerage and water supply?—Yes.

185. Do you mean that there should be a compulsory union?—Yes; I believe that in some cases you would want it.

186. Such as the power which the Home Secretary now possesses under the Fishery Acts to place either an estuary, or a whole river basin under one local authority?—I am not acquainted with that.

187. But at any rate you would put the initiative into the hands of the Home Secretary?—The initiative should be in some power distinct from the local authority.

188. On the ground that an injury to a town might arise outside of the jurisdiction of the local authority, by a town higher up the river, for instance?—Yes.

189. Then such a large authority as that might serve the purpose which I have just mentioned?—Yes, if you could contrive such an intermediate authority.

190. Do you remember giving evidence in 1864 before the sewage committee?—Yes. (*See Appendix*, p. v.)

191. Are you still of the same opinion as you held then with regard to the authority over river basins, namely, that there should be a single authority over the whole of every watershed or river basin which should have the powers of the Local Government Act, and that it should compel the local authorities to put the powers of the Local Government Act in force, and that it should also have rating powers?—You want some power of that kind, if you can get it.

192. Are you aware that the evidence of one of the

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commissioners, Dr. Acland, went to the same purpose?—I am not. (*See Appendix*, p. iv.)

193. Do you remember that the committee unanimously reported in favour of such a plan?—I believe that they did so. (*See Appendix*, p. i.)

194. (*Mr. Cave.*) With respect to harbours, has the harbour authority in any case jurisdiction over all matters of this kind, to the ousting of the general local authority of the town?—Possibly under a local Act; it would be under a local Act, if so. I think that I have heard of cases in which the harbour authority has claimed jurisdiction over the quays, and approaches, and so on, and where difficulty has been created in the case of artificial harbours.

195. At Liverpool, for instance, by the dock company?—Yes. I have no doubt that difficulties may have arisen, but I have not a personal knowledge of any very serious ones. I however have heard of such cases—I think that that case has arisen at Cardiff.

196. (*Chairman.*) Is there not in some towns a conflict between a number of old corporations of divided authority?—Yes, in towns which were passed over by the Municipal Corporations Act, the old corporations, as far as I know, are simply obstructive, and at present a difficulty is found in that respect.

197. Is not Seaford a case in point?—Yes; an old corporation exists there which has done everything which it can to job away all the property in its hands, and the only purpose to which it puts its corporate power is to divide the property between the freemen, in the shape of drink money; they have managed the small property of the corporate place most improvidently merely to acquire a little more drink money. In fact I do not see why those small corporations should not be entirely done away with.

198. Will you show the Commission what your office does under the Local Government Act, in the first instance, and afterwards, under the Sanitary and Sewage Utilization Acts?—We will take the case of a borough in the first place. We receive notice from the borough that the Act has been adopted by the town council, and we publish that in the gazette. The next thing probably which we have from them is a petition for a provisional order to alter their local Acts and thereupon we direct a local inquiry by an inspector, and we go into their local Acts. That inquiry is reported upon, and we frame a provisional order dealing with the local Acts as prayed in the petition, or as the case may be. If the objects of the petition are approved, it is done according to their wish, but there are very often modifications, sometimes more and sometimes less of the Act is repealed, than they wish. In the end a provisional order is framed, which carries out their object, more or less modified, and sometimes without any modification at all, and which is introduced into a confirming Act, which becomes law.

199. When you talk of approval, that means your own approval?—I mean the approval of the Secretary of State.

200. Practically, is it not your own approval?—No; in my experience, when any difference of opinion has arisen between me, as the executive officer of the Secretary of State, in any matter, and the locality, the Secretary of State has always looked into the matter himself and has decided it. If no difficulty arises, the matter goes on through me. Then the order is submitted to Parliament in a confirming bill, and that bill is passed and becomes a public Act, but any person who objects to the order has the power of petitioning before the bill goes into committee, and of being heard if he thinks proper in committee.

201. Are these Acts what we call Omnibus Acts, in which several cases are put into one Act?—Yes. Here, for instance, are the Acts of 1867 and 1868. Each Act has a schedule including a number of orders which relate to different places. For instance, I will take the Act of the 30th and 31st of Victoria, chapter 65, which was passed in the year 1867. It is "An Act to confirm certain provisional orders "under 'the Local Government Act, 1858,' relating to the districts of Sheffield, Derby, Sherborne, Royton, Bedford (Lancashire), Slough, Sandown, Burton-upon-Trent, West Cowes, and Accrington." Each of these orders relates to a different district, but they are all included in the schedule to this one Act. The Act is a very short one. It simply enacts that "The provisional orders "contained in the schedule hereunto annexed shall, "from and after the passing of this Act be absolute, "and be as binding and of the like force and effect, "as if the provisions of the same had been expressly enacted in this Act. This Act shall be "deemed to be incorporated with the Local Government Act, 1858, and shall be as if this Act and the "said Local Government Act were one Act. In "citing this Act in any other Act of Parliament, or "in any proceeding, instrument, or document whatever, it shall be sufficient to use the words and "figures 'the Local Government Supplemental Act, "1867, (No. 2.)'" There are ten provisional orders. The first is a "Provisional order putting in force the "Lands Clauses Consolidation Act, 1845, within the "district of the Sheffield Local Board, for the purchase "of lands by the said board for street improvements." The second is a "Provisional Order putting in force "the Lands Clauses Consolidation Act, 1845, within "the district of Derby, in the county of Derby, for "the purchase of lands by the Local Board of "Health for the aforesaid district for street improvements." The third is a "Provisional Order putting "in force the Lands Clauses Consolidation Act, "1845, within the district of Sherborne, in the "county of Dorset, for the purchase of lands by the "Local Board of Health for the supply of water to "their district." The fourth is a "Provisional Order "putting in force the Lands Clauses Consolidation "Act, 1845, within the district of Royton, in the "county of Lancaster, for the purchase of lands in "the aforesaid district for street improvements." The fifth is a "Provisional Order putting in force the "Lands Clauses Consolidation Act, 1845, within the "district of Bedford (Lancashire) Local Board, for "the purchase of lands by the said board for sewage "outfall purposes." The sixth is a "Provisional "Order putting in force the Lands Clauses Consolidation Act, 1845, within the district of the Slough "Local Board, for the purchase of lands by the said "Board, for works for flushing the sewers within "their district." The seventh is a "Provisional "Order putting in force the Lands Clauses Consolidation Act, 1845, within the district of Sandown, "in the Isle of Wight, for the purchase of lands by "the Local Board for that district for street improvements." The eighth is a "Provisional Order for "the alteration of the town of Burton-upon-Trent "Act, 1853, in force within the district of the Burton-upon-Trent Local Board." The ninth is a "Provisional Order altering a Local Act in force in the "district of West Cowes." The tenth is a "Provisional Order extending the borrowing powers of "the Local Board of Health of Eckrington."

202. You mention that as a good sample of the confirming Acts?—Yes, and it is a remarkably simple one. There is very often more necessity in provisional orders for dealing with different subjects. We have other functions, however, than this in relation to provisional orders. A petition is sent to the Secretary of State against the vote by which the Local Government Act has been adopted. He then inquires into allegations of impropriety in relation to the adoption,—either that the vote was not properly taken, as a matter of law, or that the place is not as a matter of fact, a proper place for the application of the Act. The Secretary of State inquires into those allegations, and he is empowered to dismiss them or to make an order upon them; so that the confirming of the adoption depends upon him, if there is a petition. When once the Act is brought into force, there are powers of appeal to the Secretary of State for certain purposes. In a case of private

improvement rates, where a person, for instance, is charged for the sewering of a private street, or the kerbing, flagging, and channelling of a private street, and thinks that he is charged too much, or ought not to be charged at all, he appeals to the Secretary of State, who has power to make an order. Then, whenever the local board want to borrow money on the mortgage of their rates, they must come for the sanction of the Secretary of State. For that purpose there is a local inquiry and a sanction is given by the Secretary of State upon the result of that inquiry. As a general rule a local board can only borrow a year's rateable value; but if they desire more, they must come to the Secretary of State to get power to borrow up to twice that amount, but that is only given by provisional order. The Secretary of State makes inquiry, and makes a provisional order, which is confirmed like the other provisional orders. There are other powers which he exercises; for instance, the incorporation of an adjacent outlying portion of a parish; that can be managed by provisional order. The separation of a part of a district which thinks that it had better be separated from the district, can be done by provisional order. Then there are all the modifications of local Acts, of which I have already spoken; so that our chief relations with the local board, when once established, are either through their applications for sanction to borrow money, or through their applications for provisional orders. But besides this, a power is given by the 49th section of the Sanitary Act, of general appeal to the Secretary of State in all cases of default by local boards, so that we have a great variety of appeals under that section, that power having been first given by the Act of 1866. Then we examine and approve all the bye-laws which are made by local boards. There is also a power of putting in force the provisions of the Lands Clauses Consolidation Act for the compulsory purchase of lands for street improvements, or any of the purposes of the Act; which we do by provisional order confirmed by Parliament.

203. You have described the process of adopting the Local Government Act, and also the powers and functions of certain parties in a place which has adopted that Act. Before I ask you for your opinion as to the well-working of this system, I will ask you—What does your office do under the Sanitary and Sewage Utilization Acts?—Under the Sanitary and Sewage Utilization Acts we have a certain power where a parish forms out of itself a special drainage district, which it can do; that is to say, it can carve out a district, when the vestry of the parish think that the rates ought to be borne only by a portion of the parish, and it can convert that portion into a special drainage district. An appeal is given to the Secretary of State against the formation of such a district. He can hold an inquiry, and make an order with respect to the formation of special drainage districts; that is under the Sanitary Act of 1866. He can also under the Sewage Utilization Act of 1867 form a new district, that is one which has no existing boundaries for the purposes of the Act. He can settle such boundaries on the petition of one-tenth of the people living within the boundaries of the district petitioning, just as he can under the Local Government Act. All sewer authorities, under the Sanitary and Sewage Utilization Acts, have power to borrow money for sewerage or water supply, on the mortgage of their rates, and the Secretary of State has to give his sanction to these applications. There is an appeal to him in cases of default by sewer authorities, and he can inquire into those cases. If the local authority do not do their duty after inquiry, and after the order of the Secretary of State that they shall do their duty in the particular manner complained of, he has power to appoint a person to do the duty; and not only has he that power, but he can issue his precept to the local authority to make a rate for the purpose of paying that individual for the work which he has done, and for the superintendence which he has given to the work; and by the latest Act on the subject, if the sewer authority refused to raise the rate the Secretary of State can himself appoint a person to levy the rate in their stead, although it has never come to that. So that the Secretary of State under the 49th section can take upon himself in the last resort the duties in which a local authority fails, both as regards the planning of works and the carrying out of works, and the paying of their expenses. That is a very large power, given for the first time in that Act; no such power was ever conferred by English law before, and that power has been in existence since 1866. I have here a return of all the cases in which application has been made to the Secretary of State under that section, and I will put it before the commission. The power of levying a rate was given by the Sanitary Act of 1868, which is an amendment of the Sanitary Act of 1866. There is also under the Sanitary Act a peculiar power given to approve regulations for lodging houses, that is to say, houses occupied by more than one family; that is under the 35th section. In the notice published in the London Gazette the Secretary of State declares the following portion of the Sanitary Act of 1866 to be in force, namely: "For fixing the number of "persons who may occupy a house or part of a "house which is let in lodgings, or occupied by "members of more than one family. For the regis- "tration of houses thus let, or occupied in lodgings. "For the inspection of such houses, and the keeping "the same in a cleanly and wholesome state. For "enforcing therein the provision of privy accommo- "dation, and other appliances and means of cleanli- "ness in proportion to the number of lodging and "occupiers, and the cleansing and ventilation of the "common passages and staircases. For the cleansing "and lime whiting at stated times of such premises." After the Secretary of State declares these powers to be in force in the district, the local authority may make regulations in these matters.

204. Have you completed your answer as to what your office does under the Sanitary Act?—I think so.

205. What does your office do under the Sewage Utilization Acts?—The Sewage Utilization Acts must be read along with the Sanitary Act. The Sewage Utilization Acts confer the powers, while the Sanitary Act contains the regulations as to the establishment of the authority.

206. Will you state, generally, what you find defective in this process?—Under the Local Government Act the main defects appear to me to be the want of all power of the Secretary of State for inspection. We can give powers, but we have no means of seeing how those powers are carried into effect, or that they are working for the good or ill of the district in which they are in force. We are totally without inspecting powers. Under the 49th section we can now exercise power if default is alleged. That I think is a great defect under the Local Government Act; it seems to me that we have only powers for doing half our work.

207. What is the inspecting power which you would wish to have?—The power of examining into the working of the Act, systematically and regularly, and of seeing that the Act is carried out, and how it is working; of seeing that the local authorities are doing their duty, and what is the effect of their execution of their duty on the health, or comfort, or improvement of the district.

208. Would you, then, be in favour of having inspectors who, without any local complaint, should be continually making a circuit of the country?—I think that something of that sort is wanted.

209. Have you any opinion as to the number of inspectors who would be required for that object?—I should not like to give an opinion upon that subject without full consideration. I should not like to name a number.

210. How many inspectors have you now in the local government office?—Three.

211. What is their duty?—They at present conduct all the inquiries which arise under the Local

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Government Act and the Sanitary and Sewage Utilization Acts. They go down and make an examination on applications for loans by local boards; they go down to settle boundaries; they go down to hear appeals on default, both under the Local Act and under the 49th section of the Sanitary Act. They are constantly employed in the duties which devolve upon them under that Act.

212. They are employed, in fact, by you to verify complaints which are made to you?—Yes, and also to make inquiries into applications for sanctions to loans. They conduct very often very grave and important judicial inquiries, such, for instance, as an inquiry into the propriety of granting powers for compulsory purchase of lands, or as to the legality of a vote for the adoption of the Act, or on the merits of the case, namely, whether a place is a proper one for the adoption of the Act. They have functions which may be properly called judicial, and they have functions which may be properly called engineering.

213. Am I to understand you to propose an increase of the same body of inspectors which you now have, with somewhat different functions?—I should suppose that the same class of men who would be qualified to inquire and report as to the working of the Act would be the men who would conduct these inquiries under the Act, where it is in force. Of course, if the Medical Department of the Privy Council were put under the same authority as my office, the services of medical inspectors would be available.

214. Supposing that the Medical Department of the Privy Council were placed, together with your Local Government Office, under the same office, would it still be necessary to have two sets of inspectors, one for medical subjects, and the other for general superintendence and administration?—I should expect that you might find men who were capable of dealing with both.

215. How many inspectors are there attached to the Medical Department of the Privy Council?—I do not know exactly. I may mention that I think that the great want of the central authority under the Local Government Act is the power of inspection; that, I think, is the great defect of the Secretary of State's power under the Public Health Act.

216. Are there any other defects in the Secretary of State's power in the operation of your office connected with the Sanitary Acts?—With regard to the Sanitary and Sewage Utilization Acts, I think that it is clear that the duties which are thrown upon the Secretary of State, under the 49th section, are beyond his powers, as his office is now constituted. The Secretary of State is called upon under the 49th Section to appoint persons for doing the duties of local boards; he may have to appoint a person to carry out the sewerage of a district; he has not only to do that, but he must borrow the money in order to pay the cost of those works. He must have arrangements by which he can put himself in communication with the engineer whom he appoints. He must see that the contractor does his work properly, and that the man whom he has appointed is entrusted with the money which the Secretary of State borrows to pay to the contractor. Not only that, but he must regulate the collection of rates in that district in the last resort, supposing that the local board refuses to collect the rates. Now, unless you suppose that this power is to be exercised in very rare cases, it is one which requires means and officers whom the Secretary of State has not at his command. He has no staff for the purpose; his office was never equipped for that purpose, unless you suppose it to be a power to be exercised so rarely that the Secretary of State can appoint people whom he wants for the nonce, and that he will not be hampered by a great many such applications. At present, although we only got the power of rating in 1868, the Secretary of State has appointed men to do the work in which the local authority has made default in four cases.

217. Do you suggest supplying this defect by increasing the power of the Secretary of State?—No, I should rather suggest that the function is one which ought not to be thrown upon him, and that there should some intermediate authority between him and the smaller local authority for the purpose of doing this kind of work, with which the Secretary of State is now charged under the 49th section.

218. Have you formed any opinion as to what sort of intermediate body might undertake those functions?—Either the river conservancy board to which Lord Robert Montagu alluded, or some representative body for a county, or some large territorial division, which should exercise a power over the local authorities thin its area.

219. Do you say that with reference both to towns and to rural districts?—The case would more seldom arise in towns; the difficulty, as a rule, is really with the small districts, but if a town authority did refuse to do its duty, and would not exercise the powers which the law vested in it, I presume it would be in the same predicament as a rural authority.

220. Why do you think that these functions could not be efficiently discharged by the Secretary of State if his staff was sufficiently increased?—Simply because they are not powers of the kind which he has been in the habit of exercising. He would have to create a staff for their discharge, and they do not seem to be at all akin to his ordinary work. He has no knowledge of engineers, he has no knowledge which should qualify him to select an engineer; that must of course be done by those who are more or less in contact with engineers.

221. Have you now stated generally the main defects which you see in the working of your office, with regard both to the Local Government Acts, and to the Sanitary and Sewage Acts?—Those are the great defects there. Of course there is the great defect of the want of a consolidation of the Acts.

222. Have you any defects to point out in the process of adoption of the Act before you come to the powers of your office when the Act is adopted?—Supposing no power of initiation to be vested anywhere but in the local authority, I think that the mode of adoption now followed is on the whole satisfactory.

223. (*Lord Robert Montagu.*) Have you any opinion as to which would be the best as an intermediate authority between the Home Secretary and the Local Board, whether a county board would be better, or a board for a whole river basin?—The only reason why I propose a county board is that it is a more familiar body, whereas a board for a river basin would be new. If one was absolutely free to choose, I should be inclined to think that a river basin board, or a river conservancy board would be the one most naturally fitted for this sort of work, but the reason why I mentioned a county board is that we are all familiar with that division. and that we are already familiar with the idea of representative county boards with jurisdiction over local rating.

224. Except for that familiarity you think that a board for a whole river basin would be better?—Yes.

225. For instance, in one river board there may be a good many counties, and the river may be polluted higher up?—Yes. With regard to river basins one obvious difficulty is their great size.

226. In the case of river basins and arterial drainage, would it not be better to have a whole watershed under one board, than to have it divided into eight or ten county boards, each acting independently of the other?—Mr. Rawlinson has paid particular attention to this subject, and he probably could speak with more profit upon the question of watersheds than I could. From his inquiries, as a member of the first river pollution commission, and also as having given great attention to the subject of sewage irrigation, and the utilization of sewage, I think that he could give valuable information to the Commission upon these points.

227. Is not the Thames Conservancy Board pretty nearly a watershed board?—Yes.

228. I believe that the reports of the River Pollution Commissioners are in favour of watershed boards,

are they not?—Yes, the original rivers' commission were in favour of it. (*See Appendix*, p. vii.)

229. The second commission has not reported as yet, has it?—No.

230. (*Mr. Cave.*) I think that the Lee River is the only case in which the Conservancy Board has jurisdiction over the whole of the tributaries.

231. Do you see any objection, if you adhere to counties, to the quarter sessions being what you may call the local central authority?—The only reason why I object to that is, that it comes together only once a quarter. I was rather contemplating an authority which should be continuous in its action—a paid authority, consisting mainly of paid officers giving their whole time to the work.

232. In addition to what you stated as to the duties of the central board, I think that you have also to cure defects of procedure, to intervene, for instance, in cases of defects of procedure in levying rates, and so on?—We intervene in the case of private improvement rates, but the central authority does not act as a board of appeal on rating questions; the appeal is to the quarter sessions.

233. You, I dare say, know the case of New Shoreham, in that case you intervened, the rate having been quashed by the quarter sessions, to enable the money to be raised for the same purpose in a different way?—Yes, we intervened there under our power to give sanction.

234. The rate being bad, you gave power to borrow upon a subsequent good rate?—Yes. We give our sanction to borrow upon the rates generally and not upon a particular rate.

235. For how many years in general can a board mortgage the rates?—They can borrow loans to be repaid in 30 years; that is, in ordinary cases. Where they go beyond one year's rateable value they can have their term of repayment extended as far as 50 years. That is the maximum.

236. With regard to the omnibus Acts, to which you have referred, is it the fact that in the case of an opposition to any portion of the schedule of one of these Acts the part with respect to which the opposition arises is taken out of the schedule and sent to a select committee like a private bill?—Yes. We put the cases which are opposed into a separate Act. We try to get unopposed and opposed orders together in separate bills, so as not to stop the progress of the unopposed orders.

237. It is the same as with regard to provisional orders in the case of harbours under the Board of Trade?—Yes, all the provisional orders are founded upon ours.

238. Have you found any inconvenience in the establishment of voluntary districts as regards what may be called capricious districts, in consequence of little bits of country being left between two such districts?—Yes, and in the case of special drainage districts under the Sanitary Act, the inspectors are strongly of opinion that no such special drainage district should be formed without the sanction of the Secretary of State, in order to avoid those difficulties. In some parts of England there is a disposition to cut up districts unfairly and mischievously.

239. (*Mr. Hibbert.*) I understood you to say that there are four cases where the sewer authorities have refused to do the requisite work?—There are four cases where it has come to what I call the last step, namely, the appointment of a person to do the requisite works.

240. In those cases what has the Home Secretary done?—He has appointed an engineer in each case. In one case the engineer is carrying out the works. In the second case the engineer is engaged in taking the levels and in making a preliminary survey. In the third case the Secretary of State has appointed an inspector who has made a preliminary survey and has reported upon the works required. In the fourth case the Secretary of State has just appointed an engineer who is about to proceed upon his examination.

241. I suppose that you do not yet know whether the action taken by the Home Secretary will compel the authorities to do the work at all?—In some cases they have themselves carried out the work after they have had the first order served upon them, and before it has come to the appointment of a person to perform that duty.

242. Do you think that it is likely that the work will be carried out without that appointment by the Home Office?—I should like to have another year to answer that question. There has been a disposition in some cases to throw the work upon the Home Secretary. They have said, "We cannot agree about it; "let the Home Secretary do it; we should like "him to do it: it will save us trouble."

243. If the Home Secretary, after an inquiry by an engineer of the Home Office, directed the work to be done, would it be possible then to throw the onus either upon the board of guardians of the district, or upon the magistrates of the district in quarter sessions?—Yes, you might do something of that kind.

244. I suppose that you do not object to the power of the Secretary of State being brought into action with respect to the mode in which the drainage is to be done, but that your objection is more as to the trouble of seeing that it is properly carried out?—If you impose upon the Secretary of State the duty of carrying out the work, supposing the local authority to continue recalcitrant, you have to impose upon him the management of the work for a long time, and you may impose upon him the duty of collecting the rate for 30 years.

245. Would it not be possible to leave the authorization of the work to the Home Office, and then for it to be done by the local authorities?—If you retain in the Secretary of State the ultimate power of directing the work, I think that that might be done.

246. Would not that get rid of the objection?—It would get rid of the heaviest part of the objection.

247. (*Mr. Powell.*) Have you had occasion to exercise any authority under the powers of the Artizans and Working Classes Act, with reference to the exercise of the power of the medical officer?—Yes, in one case, at a place called East Dean, in the Forest of Dean.

248. Do you think that that power has come into extensive operation?—That is the only case in which we have yet applied it; it was suggested by one of our inspectors as one result of his inquiry in the locality.

249. In the applications for provisional orders, of which you have spoken, do you find that the authorities are anxious to fall back upon the provisions of the general statutes in substitution for their local Acts, or parts of them, or that they desire to have new provisions of their own?—I think that they are generally desirous of fusing the local Acts with the general Acts; that is to say, of suppressing those portions of the local Acts which are inconsistent with the general Acts.

250. Then your evidence is that there is a satisfactory movement towards a simplification of the law upon those points?—Yes, in places under our Acts there certainly is.

251. Do you think that the Home Secretary, whom you do not think competent to deal with the 49th section of the Sanitary Act for the reason which you give, is competent to deal with such questions as appeals on private improvement rates?—So far he is competent, because an inspector goes down and inquires into that particular case of appeal; he has the facts all before him; he exercises a judgment in the matter, and acts for the nonce.

252. And you think that that appeal is satisfactory?—I think so. I do not find much complaint of the results in these cases.

253. As to confirming byelaws, do you think that a great officer like the Secretary of State can inform himself so much in each case as to exercise a discretion with respect to byelaws?—That power of course must be exercised by a subordinate. I examine those byelaws, and have a report made upon them,

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and the questions with regard to those byelaws are passed through me, but it is a mistake to suppose that the Secretary of State does not exercise an independent opinion of his own upon cases of complication or difficulty. I always refer these to the Secretary of State, with a full minute. Important cases do not often arise. The great majority of the cases which come before me are such as I can perfectly well settle.

254. How do you ascertain the nature of a locality. For instance, whether it is purely agricultural, or whether it contains manufactories?—Generally speaking the inspectors know the character of a district, and we can judge with their help of the character of a district. If any special question arises we have to make inquiries, but if no question arises of course we are not specially informed.

255. Do you think that any inconvenience arises from dealing by local Acts with powers to borrow? For instance, the general Act gives power to borrow for 50 years, and the local Act may give power to borrow for 100 years?—We have had some instances in which Local Acts have been applied for in order to obtain larger borrowing powers than could have been exercised under the Local Government Act, and rather improvident borrowing powers. I think that when a place has adopted the Local Government Act, it should not have power to go for a local Act, except by the special authority of the Secretary of State.

256. You think that there ought to be some restriction upon that power?—Yes. I will quote the case of Wallasey, where they have a very heavy debt, and where probably if the Secretary of State had been allowed some restrictive power he would have exercised it.

257. You have spoken of three cases with reference to rates under the Act of 1868, are they cases of any magnitude?—The Home Secretary was unwilling to appoint an officer to do the works under the Act of 1866 until he saw his way to getting back the money. One of those cases is a small case at a place called Wetheringsett in Suffolk, that does not exceed an expenditure of 300*l.* That is a case of deficient water supply, where the population has had fever decimating it for some years past. In that case there is no water supply except from ponds and ditches. The next case is the case of Epping, where a district has been created under the Sanitary Act, uniting parts of three parishes. We have there appointed an engineer to take the levels for works of water supply and sewerage. That case may involve 4,000*l.* or 5,000*l.*, or even 6,000*l.*, of outlay. Another case is Bromyard, where we have appointed an engineer to make the necessary inquiries and plans for water supply. The town council refused to do anything for the water supply of the district, and in that case 250*l.* I think has been expended for the preliminary inquiry and the preparation of plans; the work itself will probably involve 6,000*l.* or 7,000*l.* There is another case, at Southover, near Lewes, of the pollution of the Winterbourne; that is a case requiring an intercepting sewer. We have not yet had the report of the engineer as to the cost, but it will not be very much. These are the cases in which we have actually proceeded to appoint the persons to do the work. We have had a very great many cases in which we have been at the local authorities for a long time, to get them to do the work. There is a case at Saxmundham, where we have been between two and three years endeavouring to induce the local authorities to do the work, and where they have now determined to have the work done.

258. The importance of those cases is not to be measured by the three or four cases which you have stated?—No. The amount of trouble which the 49th section of the Sanitary Act gives us in the shape of inquiries and communications, and correspondence with the local authorities, is very great indeed.

259. (*Mr. McClean.*) Where a provisional order is applied for to take lands compulsorily, is it necessary to give notice?—Yes, in November, just as in the case of an application for compulsory powers under a private bill.

260. (*Mr. Bircham.*) Are you of opinion that the existence of this ultimate power on the part of the Secretary of State, and the fear of a great expense being incurred through him, does in fact bring recusants to do their duty?—I think that the Act has been beneficial in that respect.

261. Do you not think that the repeal of that power might operate prejudicially?—I do not wish to have it absolutely repealed. I should very much prefer some provision by which the power of direction should be left in the Secretary of State, and by which the executive work should be transferred to some local authority.

262. If the executive work is taken out of the hands of the Secretary of State, will not he then have to drive the local authority by the ordinary tribunals to the execution of the work?—There must be some local tribunal for that purpose. All that I complain of is that the Secretary of State is not properly furnished with means for performing the duties which the 49th section now imposes upon him.

263. In your judgment should that local authority be some fresh authority, or the ordinary local body in the district?—I mean some larger authority, but local in character.

264. You probably refer to some intermediate authority?—Yes.

265. You rather favour the idea that that should be an authority representing a river basin?—I said that if I were perfectly free to act, in a new country, that might be the determining area.

266. What suggests itself to your mind as the meaning of the word "river"? a stream of what size? I will illustrate my question thus: In the Thames conservancy, the Thames basin is a basin without tributaries, except within three miles of the main stream. In the case of the Lee conservancy it includes all the tributaries of the watershed?—I was rather looking to the whole system, that is to say, the main stream with its feeders.

267. Do you think that such a board as the Thames Conservancy is satisfactory, or has been able to deal with that subject?—Its area of jurisdiction is too large. You want a system of bodies rather than a single body for such large areas.

268. Have you any idea as to what the area of the Thames conservancy is?—The exact figures are not so much within my knowledge as within the knowledge of Mr. Rawlinson, whom I should prefer being examined upon that subject.

269. Looking at such a river area as that of the Mole what would be your opinion?—That would be more within the scope of a single authority.

270. But very capricious areas would be found to exist?—Very varying areas exist.

271. If you adopted the river system you would have a new system of rates?—Yes, that is another difficulty; all those difficulties arise in consequence of the novelty of the authority, and that made me mention county boards as the authority.

272. Wherever there is a modern river conservancy has it not been very strongly against the putting of sewage into the stream?—That is the action of the Thames conservancy.

273. Therefore does it not become rather less necessary to consider the question of river authority in these questions of sewage and drainage?—There are two questions, namely, the question of the disposal of the sewage, and the question of the arterial drainage, which may very often have to be considered together. You may have to determine your plan of sewerage by natural considerations of flow, which, of course, to a great extent follow the river basins. In some cases you cannot get effectual sewerage without combining a good many places, and generally the places which you have to combine are those which are on the same line of water-flow.

274. The Sewage Utilization Act of 1865, the Sanitary Act of 1866, and the Acts in amendment of them, in point of fact, constitute a code of laws with regard to everything where the Local Government Act has not been applied?—Yes; or where private Acts have not provided for the same matter.

275. Have you had brought under your notice the probable operation of those Acts in their internal arrangements, such as their provisions for the election of committees?—Yes, and they are very insufficient in that respect. There is no provision for regularly recurring elections of the committee; the vestry choose the committee, and may upset it when they please.

276. There are no satisfactory provisions with regard to the imposition of rates?—The rates for defraying the expenses of the Acts in a great many cases are poor rates.

277. But in the case of special districts or rates there are no provisions with regard to their imposition, the Act merely says that there shall be a rate?—You are left very much to the general law as to rating.

278. I believe that under those Acts it is somewhat doubtful whether they apply to drains other than those created by themselves?—The Public Health Act carries over existing sewers to the Board of Health.

278*a*. But there is no such carrying over in the case of the sewage and drainage authorities?—That is so.

279. (*Sir T. Watson.*) If medical inspectors were appointed, do you think that they should act voluntarily, or only when sent by the central authority?—In speaking of a want of inspectors, I contemplated the want of inspectors who were in the regular discharge of the duty of inspectors. I meant inspectors constantly engaged in their work like Poor Law and Lunacy Commissioners; a permanent inspecting staff always engaged in the work of inspection.

280. (*Dr. Acland.*) I do not understand from what you have said with regard to river basins that you have had any particular reason to suppose that they would constitute good sanitary districts?—No, except that drainage with respect to superfluous moisture, and with reference to the disposal of sewage, depends upon the natural flow of waters, and that that more or less points to a connexion between the areas drained by a river and the districts which may be formed for sanitary purposes.

281. That is purely an engineering question, independently of the question of convenience?—Yes.

282. What kind of area do you think would be most convenient; would the registration districts be so?—The registration districts would give you one material advantage, namely, that you could get the statistics of death and disease, which now have no relation to areas of town government or local improvement.

283. Your experience has not shown you a reason why a river basin should be taken in preference to registration districts, or special sanitary districts?—Generally speaking, I would avoid dealing with England as a *tabula rasa*. I have never thought of forming new districts, because I thought that we should never get a chance of it. I have rather thought of getting some authority already existing. I have always supposed that we should have to take some such authority, and I have contented myself with the best which I could get for that purpose.

284. But that, I suppose, is an open question?—It is quite an open question. I do not feel myself competent to speak confidently upon it.

285. You have spoken of the necessity of an inspection, and I understand you to say that the powers of the Act are sufficient except as regards inspection?—Yes, speaking generally.

286. Have you had any experience (without mentioning names of places, which would be invidious,) which would lead you to suppose that works have been executed in country places or hamlets, where there would have been great benefit from the superintendence of a superior engineer?—Yes, we have had works which were good in plan, but bad in execution.

287. A first-class inspector there would have been of advantage?—Yes, if he could have seen the works in progress; but considering the amount of works going on in different places at the same time you could hardly have expected that inspector to have exercised such a surveillance as to see that the works were properly done; you must trust to the localities for that.

288. If large districts were existing, probably you could trust works of that kind to their superior engineers?—Yes, more or less.

289. In that case you would not burden the Secretary of State with such an inquiry?—No, you would get rid of a great deal which does not properly come within his functions.

290. I think that the Lunacy Commissioners have two kinds of inspectors, one legal and the other medical, with a regular circuit. Would there be any objection to a combination under the Local Government Act, of the functions of legal medical and engineering inspectors in the same persons?—No, except as regards the division of labour. The chances are that we should never get one sufficiently strong staff of inspectors, still less a double staff.

291. Do you know of many cases where there has been great harm from long neglect?—Yes, many cases of long-continued neglect and long-continued disease; and the inspector might have pointed these out before the people thought of remedying them. A great many of them do not know that we have this power.

292. (*Lieut.-Col. Ewart.*) You have said that in the case in which towns seek to borrow money an inspection is made?—Yes.

293. What is the definite object of that inspection?—In the first place, to go over the plans with the local engineer or surveyor on the spot, and in the next place, to hear the evidence on the spot as to the objections either to the plans or to the loan.

294. Does the adoption of that inspection carry with it the approval of the plans and estimate?—It may lead to the rejection of the plans, and to a correction of the estimate.

295. If permission is given to borow the money does it involve the approval of the plans and estimates?—The Secretary of State gives his sanction to the loan; he does not give any approval of the plans except an implied approval; he gives no formal approval of the plans.

296. He satisfies himself that the expenditure money which is about to be borrowed is necessary?—Yes. For instance, he would, perhaps, point out to the locality that a different mode of dealing with the sewage, or a different outfall or size of pipes, would be an economy. In most cases in which he suggests a change the local board adopt it, but sometimes they do not, and sometimes we have had continued differences, and a long argument with them upon the point, and if they decide in the result to abide by their own plans, where the matter is one in which difference of opinion might be fairly allowed, we have not thought it our duty to force our opinion upon them. If the plans were inconsistent with themselves, we should refuse to sanction the loan until such an alteration as we considered necessary was made in the plans.

297. In the case of drainage, would you say that they were going upon a wrong system, or would you leave them to themselves?—For instance, supposing such a question to arise as between the separate system and the joint system, that is to say, the system of of carrying the rainfall, and the sewage in separate pipes, and the system of carrying them together in the same pipes; in such a case as that, we should not think it necessary to enforce one system upon them in preference to the other.

298. When the power has been given to borrow money is any inspection made after the work is done, analogous to the Board of Trade inspection of railways, in order to see that the work has been properly

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done?—No, because the work is covered up, and it would be very difficult indeed to supply any reliable information as to its execution.

299. Then you do not ascertain that the money borrowed has been properly expended?—We do not go into a detailed engineering examination upon that point.

300. Is there any audit of accounts in the cases of money which is borrowed?—There is an audit of accounts in all cases of local boards; they have a yearly audit.

301. That is an audit by themselves?—Yes.

302. But there is no audit by the authority which gives them the power to borrow?—No.

303. They are left to themselves after the power is given?—Yes, they have the poor law district auditor. It is for him, not for the Secretary of State, to see that they have spent the money for the purpose for which they have obtained authority to borrow it.

304. Or that they have spent it properly?—No; that implies that they have spent it to advantage. I think that that is one of the points in which we want power to inquire, and that that is what an inspector should do.

305. When an engineer is appointed to carry out the work through the failure of the local authority, what arrangement do you make with reference to levying rates in payment?—We should first endeavour to ascertain whether the local authority would raise the rate themselves, and we should tell them the expense to be provided for. If they declined to do it the Secretary of State would have power to issue a precept to them, or, in the last resort, to appoint a person to raise the rate if they did not do it.

306. That person, in fact, would become the treasurer?—He, in fact, would become the levier of rates in that district.

307. In the districts in which the local authorities refuse to act, and the Secretary of State intervenes, does not the central government become in the same position as the central government, say in France or in India?—I do not exactly understand your question.

308–9. I mean that as a general rule there are no voluntary local authorities in France or in India. Are you conversant with the way in which such works would be carried out in France or in India?—No, I have no experience of it at all.

310. You have not studied the French system of carrying out public works, say the health works in Algeria, for instance?—No; I have no experience of them.

311. Do you not think that if a conservancy board was made an intermediate authority between the ordinary local authority and the central authority, the work thrown upon them would be too much for them?—I have already said that I think that the difficulty with regard to conservancy boards is that the area would be too large for them to deal with. The reason why I fear the inefficiency of the Secretary of State for the business thrown upon him by the 49th section of the Act of 1866 is from the vast number of those cases which might arise. He has now as many appeals under that section to deal with as he can, and if he is to appoint engineers, and to raise money, and to rate, and to do all things consequent upon it, in many of these cases he will have a number of new duties thrown upon him which he could not fulfil.

312. Do you not think that there is at present a great conflict of authority between the powers which a conservancy board can exercise, and the powers which can be exercised by the central authority?—Yes, there is a necessity for co-operation between the two. A local board upon the Thames might come to us to authorize their sewerage, and we might sanction plans which the conservancy board would not sanction. We know that the conservancy board of the Thames have refused to sanction sending sewage into the Thames after a certain date, and we should not sanction it; but still there might be other cases where the conservancy board had laid down rules, of which we did not know, and we might come into collision with them.

313. (*Lord Robert Montagu.*) In the case of a large parish which contains a town which has come under the Local Government Act (I believe that Berkhampstead is a case in point) what would the rest of the parish be under?—Under its sewerage authority; under its vestry. The Sanitary Act was amended in that respect, parts of parishes in portions of which the Local Government Act was in force being made parishes for the purposes of the Act.

314. What would you do as to the rating?—The outlying portion of the parish would be a parish as regards rating for the purposes of the Act.

315. As regards a watershed board you have objected on account of the extent of area?—Yes, and also on account of the novelty of the whole thing, and having to provide a new machinery for it.

316. The objection of novelty if good at all would of course stand against everything on its first starting?—Yes, but you have already familiar areas of administration.

317. Is not the Thames area nearly 4,000 square miles, being the largest in England?—I do not know that it is the largest. But these points with regard to the geography of river basins, and so on, are not points upon which I feel myself able to give nearly such good evidence as my friend Mr. Rawlinson can give.

318. If it is carried out at all with regard to the Thames basin it would be an argument as to the possibility of carrying it out in smaller areas?—As far as I know, all that the Thames conservators have said is that from a certain time no sewage shall be discharged into the Thames; and something more is really wanted than that, because then all the towns in the area are in a hitch. These local authorities are not helped out of their difficulties.

319. Higher up the river a local authority would not make expensive works to purify the river for the purpose of the benefit of an authority lower down, and a local authority lower down would not carry out draining and dredging works for the benefit of an authority higher up?—The conservators are certainly very well adapted to attend to the interests of the river, but the difficulty is that the interests of the towns in the basin are not now attended to. The conservators only say, "You shall not discharge your "sewage into the river," but they exercise no authority over the disposal of the sewage excepting of that negative kind.

320. Putting that aside, would not the objection to such an authority, if you divided it into certain parts, be that the authority above would not care for the authority below, and *vice versâ*?—That shows that you want an authority over the whole course of the river for the purposes of the river.

321. And for the good of the towns on the river?—Yes, of course, so far as that is connected with the purity of the river.

322. In fact for the sake of the health of the whole basin?—Yes; but the conservancy board look to the river first, they are conservators of the Thames.

323. (*Chairman.*) When we talk of combining districts under a conservancy board it is for a special object, such as for preventing pollution in that watershed?—Yes.

324. For a particular object which affects more than one district, cannot those districts combine for that particular object, continuing their local functions for all other objects?—No doubt, and that is what they have a power to do at present, to unite for sewerage, for instance.

325. To such a plan of combination as that your objection of extent would not apply, because it would be simply for one particular object which affected the whole of that extended area, and the smaller functions would still remain distinct as before?—That would be so.

326. And as to rating, the rate for that particular object would extend over all that district, but the separate districts would still rate themselves for other objects?—Yes; but supposing that to be so, you would still have left all the other purposes for which I want an authority between the local and the central authority.

327. But the combination of districts for particular objects is a distinct question?—Yes.

328. Did I rightly understand you to say in your answer to Dr. Acland, that you thought that the enlarged inspectorship which you proposed might be of two different kinds, such as inspectors to inspect the sanitary condition of places, and inspectors to overlook scientific works, that is to say, medical and engineering inspectors?—Dr. Acland, as I understood, asked me whether I saw any objection to both medical and engineering inspectors being employed, supposing that you could not find men to combine both qualifications; and I said that I did not see any such difficulty, except the difficulty of getting a single staff of either one or the other, and the hopelessness, as I thought, of getting a double staff of one and the other.

329. You would not suppose that a person who was fit to inspect the general sanitary condition of towns all over the country required the same qualifications as a man who was to overlook some scientific engineering work?—No; but I never proposed inspectors special to superintend engineering works, but to inquire into the general administration of the Act in their district.

330. Do you contemplate a permanent staff of inspectors who should always inform you as to the sanitary condition of the country, and another set of engineering inspectors who should overlook engineering works?—No. The men who will examine works with a view to sanctions would be as they are now, and I should expect that they would generally be the same class of men as would be competent to inquire into the working of the Act. I did not propose the appointment of two distinct sets of men.

331. Do you propose a set of permanent inspectors who would make a circuit of the country, or do you want to use your inspectors for particular cases?—I should think that they would be the same class of men who would sometimes inspect a district and might also be reporting upon applications from districts.

332. Do you think that your inspecting body, as you propose it, would sometimes initiate the operations of your office, and in other cases would be employed to see that your orders were executed?—No doubt they would tend to diffuse knowledge of the nature and working of the Act, and so might tend to initiate proceedings; but I should not propose that they should go distinctly for that purpose.

333. Supposing the improvements which you have suggested to be carried out, namely, as to an increased inspection, and as to an intermediate body between the central authority and the local authority, do you think that the Local Government Act would generally work well as it is?—I think that the Local Government Act on the whole works very well. As far as regards the relations between the central and the local authority, I think that there is nothing particular to complain of. Of course it depends upon those who compose the local body. With a good chairman and a good clerk the Act works well, but with a bad chairman, or a bad clerk, and still more with a bad chairman and a bad clerk, it does not work well.

334. Throughout the country does it work well?—They press for amedments of the Act upon particular points. For example, they have now under the Local Government Act of 1861 power to carry their sewage outside their district for the purposes of outfall. Then they have power to acquire lands outside their district, the utilization of sewage, and they want the same power as regards water supply.

335. What they want, generally, is enlarged powers, but as to their constitution you do not see that they require much improvement?—No, I think that the general relations of the central and the local authority, under the Local Government Act, are very fair, and that there is no great difficulty there. The new powers which they want are such as they may expect to get by amendments of the Act. At this moment I have before the Home Office a set of amendments of the Act, by which the local authorities want it amended.

336. Can we have a copy of those amendments?—Yes. (*See Appendix*, p. viii.)

337. Have you some circulars with reference to the Local Government Act which you can put in?—Yes, there is a circular under the Local Government Act which gives "information respecting the provisions "of the Local Government Act, 1858, (21 & 22 Vict. "c. 98), and the Acts amending the same (24 & 25 "Vict. c. 61, and 26 Vict. c. 17)." There is also a circular giving "information as to the powers and "duties of sewer authorities under the Sewage Utili-"zation Acts, 1865 and 1867, and the Sanitary Acts, "1863 and 1868, (28 & 29 Vict c. 75, 30 & 31 Vict. "c. 113, 29 & 30 Vict. c. 90, and 31 & 32 Vict. "c. 115)." There is likewise a circular as to the Nuisances Removal Act. (*The witness delivered in the circulars.*)

338. Can you tell us the amount of money borrowed under the Act?—Yes. The amount of money borrowed under the Act from 1848 to 1858 was 2,956,178*l.*

339. Was that in England and Wales?—Yes.

340. Irrespective of the metropolis?—Yes. That is under the Public Health Act of 1848. Then, under the Local Government Act, since 1858, in the last 10 years there has been borrowed, with the sanction of the Secretary of State, 4,611,105*l.*, making a total of 7,567,283*l.* borrowed. Under the Sanitary and Sewage Utilization Acts there has been borrowed, with the sanction of the Secretary of State, 61,478*l.*, making a gross total of 7,628,761*l.* borrowed under the two sets of Acts.

341. From your practical knowledge of the working of these Acts, do you think that they are now in a state fit for consolidation?—Certainly.

342. And do you think that that is desirable?—Certainly; in itself, most desirable.

343. Have you any other remark which you wish to make?—I have here the reports which we have made yearly to Parliament since the Act of 1858 was passed, which show everything which has been done from year to year.

344. (*Mr. Hibbert.*) Is any report made to Parliament with regard to what is done under the Sewage Utilization Acts?—We are not bound to do that; but in our last three reports, wherever we have granted sanctions under the Sewage Utilization Acts, or have made reports under those Acts, we have included these in our report.

345. Is any return made to Parliament as to the amount of rates expended for those purposes upon the sewers?—No. So far as I know we have no means of providing such a return. The Poor Law Board would be the only board who could make such a return as that, if they have the means of doing it; but I do not know whether they could do it. I will put in a return of the proceedings under the Sanitary and Sewage Utilization Acts. This return extends to last year, from the passing of the Acts (*delivering in the same*).

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 29th April 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
GEORGE CLIVE, Esq.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JAMES PAGET, Esq., F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

Henry Thring, Esq.

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(2.) HENRY THRING, Esq., examined.

346. (*Chairman.*) You are the parliamentary counsel?—Yes.

347. You have drawn up for the Home Office a memorandum on the subject of the inquiry before us?—Yes, I have prepared a memorandum at the request of the Home Office for the use of the Commission; it has not been submitted to the Government, and I alone am responsible for its contents.

348. You divide the subject generally into the operation and the administration of the sanitary laws?—Yes, into the law and the administrative bodies.

349. You state that the common law offers no practical remedy, but that the statute law is ample but complex?—That is a difficult question to answer in that form. Practically the common law is only enforceable by indictment, and in exceptional cases.

350. But that is by a process too costly and lengthened to be of practical use?—Practically it is only of use where very large interests are at stake, and where very rich people can be brought forward in support of those interests. Speaking generally, I consider that the statute law relating to sanitary matters is sufficient in substance, but is in form very complex and exceedingly difficult to understand.

351. You seem to think that what is referred to us is to amend and simplify and consolidate the laws and the constitution of the authorities on the subject?—It appears to me that the Commission will be of the greatest possible utility if they can point out the best mode of consolidating the law, and still more if they can discover the best mode in which the bodies interested in the administration of that law are to be constituted.

352. Are you aware that since you drew up that memorandum the metropolis and Ireland and Scotland, have been excluded from the scope of our inquiry?—Yes, and I think rightly excluded; it would have been impossible to have included so vast a mass of matter. The metropolis from its size is entirely different from any other town, and the Irish and Scotch towns are subject to different laws from those in force in England.

353. I believe that you group the sanitary laws generally into two codes, namely, a town code and a village code?—Yes. I have done that in my memorandum for the purpose of explaining how the present law stands; but I do not necessarily consider that to be the best mode of grouping those laws when they are consolidated. In fact, I can hardly give an opinion upon the proper form of consolidation without really undertaking the work myself.

354. Is it your general opinion that the distinction of a town code from a village code need not be permanently kept in view in the consolidation of these Acts?—Not in the consolidation; the real difficulty in the sanitary law is one of principle, namely, how to distinguish the laws you ought to apply to very large places from the laws you ought to apply to country places.

355. Is it the fact that the sanitary laws as they now exist are such that the local Government Acts almost entirely apply to towns, the Nuisances Removal Acts apply partly to towns and partly to villages, and the other Acts apply to villages?—Yes.

356. Is it your opinion that the law as it stands is sufficient, as far as powers go, for towns?—"Towns" is a very ambiguous word. I think that with respect to the great cities, which have private Acts, in addition to the general Acts, for instance in London and in Manchester and other large towns, the law is in substance amply sufficient, so far as the powers go.

357. In Manchester and in other large towns are there not generally special Acts?—Yes, almost invariably.

358. In any consolidation, do you think that special Acts can be made to group with the general law upon the subject?—It is impossible for me to speak upon that point. I think that you must have special legislation for very large towns, such as towns with a population of 200,000. I think that you could not possibly make a general law which should at once be applicable to a country village, and yet supply the wants of a very large town.

359. What was the limit which you had in view when you talked of the separation of a town code and a village code?—That is a practical difficulty to be solved by the Commission. I think that a town of 100,000 persons is a town which, as a general rule, would require special legislation, but I am speaking without any special knowledge.

360. The basis of that definition would be rather the amount of population than any particular form of government?—Yes. You cannot distinguish towns by their forms of government, because in England you not unfrequently have the same form for a very large town, and for a town of a comparatively small size.

361. I observe that you exclude from our inquiry, according to your view of it, the Burial Acts, the Common Lodging Houses Acts, and others. Do you consider that in the consolidation of the sanitary laws we may take the laws which you have scheduled, exclusively of those which you have excluded?—You must place a limit somewhere. The limit which has been taken in the existing Sanitary Acts can scarcely be called a limit. The Local Government Acts, for instance, give in addition to sanitary powers every possible municipal power, making parks and roads, police clauses, and so on. If you add to those provisions the Lodging House Acts, and still more the Factory Acts, you will include the whole local legislation of England. I should myself be very much inclined to draw in any new legislation a marked line between strictly sanitary provisions and general local laws. I call strictly sanitary provisions the powers required for drainage, or for removing human excreta; also the powers required for the removal of nuisances. I should not consider that Acts such as you have mentioned ought to be consolidated in a general law unless you made a complete code embracing every possible local want.

362. Supposing that we were consolidating the Local Government Acts, the Nuisances Removal Acts, and the Sewage and Sanitary Acts, can you tell us what you think would be the general headings of such a consolidated Act?—The proper answer to such a question involves the whole difficulty of consolidation. Speaking roughly, I should repeat what I have said before. As a general rule, in every Act I lay down the law first, and I end by stating the bodies who are to administer the law, using in my statement of the law some general terms, such as "local authority" or "sanitary authority," whenever there may be

occasion to refer to the bodies intended to administer the law. In this instance I should begin by laying down provisions for removing human excreta. I should then go to the supply of water and the removal of nuisances. I consider those to be the most general subjects for legislation. In dealing with the remainder of the law I should arrange it in the best manner I could, placing probably in a separate Act the powers of local government as contradistinguished from the sanitary powers properly so called. When I had got through the law I should proceed to deal with the local authorities. Selecting first the existing town authorities, such as town councils and improvement commissioners, I should vest in them within their jurisdictions the powers to execute the law. In towns where no such authorities existed, it would be necessary to create elective bodies, as for example, local boards, under the Local Government Acts. In villages vestries would be the local authority.

363. What are the chief alterations which you would propose in order to prepare the sanitary laws for consolidation?—Beginning with the law of sewerage, I think that an optional power should be vested in local authorities in certain cases of adopting earth closets instead of water-closets, and that in these cases the persons who required water-closets should have thrown upon themselves the expense of carrying off the refuse matter from those closets. A difficulty occurs in small country towns where one or two persons are desirous of having a complicated system of sewerage for the purpose of removing the refuse of their waterclosets, while earth closets, and a simple mode of removing the sewage water, might possibly be of advantage to the poorer classes, and might not entail so much expense upon the town. With respect to the law of nuisance, there is a difficulty in obtaining the necessary evidence on the ground that the law requires you to prove that the nuisance arises from a particular manufactory. For instance, if I complain of the smell of tallow, I must prove that that smell proceeds from a particular tallow manufactory. If there are 10 manufactories all close together, and if the nuisance is intolerable, I fail, because I cannot prove that the particular nuisance which annoys me proceeds from factory A, and not from factory B. I think that that should be amended. With respect to noxious trades and manufactories, the great interests involved will make legislation extremely difficult; but I think that a law might be passed declaring that manufactories should be obliged to use the best practicable means, at a moderate cost, for removing any nuisance which might arise from the processes carried on. I also think that solid matter might at all events be excluded by law from being thrown into running streams. It would be most desirable, if possible, to prevent the pollution of streams by liquid matter, but the question involves interests of such extreme value, that I am unable to suggest any probable mode of carrying the law into effect. With respect to over-crowding I think that the law, if anything, is too stringent. It is impossible to carry into effect a provision that a house so overcrowded as to be prejudicial to the health of the inmates is to be closed unless dwellings are made cheaper, and the means of procuring better dwellings are brought within the ability of the poorer classes.

364. With regard to your suggestions as to water-closets versus earth closets, and I would also say with regard to different systems of sewerage, do you not think that the law should not enter into the comparative merits of systems, but should give a general power covering all systems?—Certainly it is not for the law to instruct people how to do the thing, but to give power to them to do it in the mode in which they may be advised by competent authority to do it.

365. Have you any distinct opinion as to what provisions in these laws should be permissive and what provisions should be obligatory?—As far as I can judge I think that there should be an obligation upon some body or other (and who or what that body should be, whether the community or individuals, is a very difficult question) to take care that all human excreta should be removed from the vicinity of dwellings, and that every person should have access to a proper supply of water; it seems to me to be of one of the great difficulties which this Commission will have to settle, not to relieve the owner at the expense of the community, but yet to determine when the community must step in in order to enable a number of people to carry out a joint scheme. In the case of a town, it is clear that the main sewers must be made by the community, and that the house drains, as contradistinguished from the main sewers, must be made by the owners. In country places there may be considerable difficulty in distinguishing where the duty of the community begins and that of the owner ends. For example, an owner builds a cottage by itself without a proper water supply, and without a drain. I should think that in such a case he ought to be responsible for making the drains, and supplying the water. On the other hand, where there is a considerable aggregate of dwellings joint action is necessary, and in most cases it would appear to me to be the duty of the community to make main sewers for carrying off general refuse, and to provide a general supply for water.

366. With regard to the constitution of the local authorities, may I thus describe the complication which at present exists, namely, that the local authority means in boroughs the council, in other towns commissioners, and in places under the Local Government Act an elective board, and that the nuisance authority is the same body with different functions, and that the sewerage authority is the same body, with the additional confusion that in rural districts it, as also the nuisance authority, carries parts of the powers of the Local Government Act in guardians, overseers, and vestry?—Yes, I think that that is a correct general description, there is a great confusion of names.

367. Would the complication be cured if all those authorities were called by the same name, namely, the local authority according to the place, and if that local authority in each place had given to it all the powers and functions which the place required?—Yes; assuming that you could correctly lay down the law, you would use a generic name for the various local authorities, and then select such local bodies as you thought fit, grouping them under the generic name. That would be the proper mode, in my judgment, of avoiding the difficulty.

368. Following out the general sketch which you have given to us of a consolidating Act, supposing that the commencement of the Act enumerated all possible powers and functions which could be legally exercised in local government throughout the country, and that the Act proceeded to say that every place in the country, whether town or rural, should have some local authority, and that that local authority should be such and such, according to the place, and that that local authority should have all the powers before enumerated, so far as they were required in the place, would not all the complication which is now complained of cease?—Certainly, and that would be the proper way of doing it, whatever system you adopted.

369. In fact, excluding the metropolis, there would in that case only be three kinds of local authorities, namely, in boroughs the council, in other towns having improvement Acts commissioners, and in rural districts board of guardians?—Sometimes in municipal boroughs there is not only a town council, but a body of commissioners acting under a local Act also, and the commissioners have sanitary duties to perform, while the town council have the general management. It would in that case be necessary to decide in which body you vest the powers. I think that you ought to vest them in the council as having the general government; but at the same time you must if possible provide for a transfer to the council of all the powers of the commissioners, if they exist. The matter is complicated in every way, owing to the complication

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of our local law, but as a general rule the town council should be the body.

370. If it was known that in every place there should be a local authority, and if that one local authority had all powers of local government given to it, there would be no complication, would there?—No, not if you abolished the local Acts where they interfere.

371. Do you think that by degrees inducements could be offered to merge the local Acts?—I think so.

372. So that you think that gradually we might get that complication to cease?—I should think so, but I have no experience upon that point.

373. Have you any proposition to make as to places which have a variety of old corporations, such as Seaford?—There are very few such places. You might in that case vest the power in the town council. I think that the boroughs not under the Municipal Corporation Act are very few, and need give rise to little trouble.

374. How far do your last answers apply to country districts?—In country districts there are now two authorities, namely, the vestry and the guardians. As far as I can judge, where there are structural works to be executed it will be absolutely necessary to keep to the vestry, and therefore I think that you must deal in country places with the vestry as the sanitary unit, and not with the guardians.

375. Then in no case would you have the board of guardians as the local authority?—No. My own opinion is, that in the country there ought to be a general control in sanitary matters lodged in a county board, which would entirely do away with an intermediate authority like the board of guardians.

376. Supposing local authorities to be constituted all over the kingdom, might not several local authorities combine for any special object affecting several districts?—I think that they might do so with the greatest advantage. I think that you might make a federal body, as it were, for the purpose of draining a large district or procuring a supply of water.

377. The rate for the expense in such a case would be a special rate levied upon the area affected?—Yes, a contributory rate. Assuming that you took any area whatever, and combined all the local authorities in that area, you would then make a joint governing body, who would execute the joint works and levy from the subordinate local authorities a contributory rate, and that rate must be defined either according to the rateable value of the property, or according to the interest of each party in the improvement. There would be very little difficulty in adjusting it fairly enough.

378. Will you describe a little more minutely the idea which you have thrown out of a county board, to act, as I understand, mediately between the local authority and the ultimate appeal to the Secretary of State?—I do not mean the county board to act mediately in cases where it acts, but to have absolute authority. At present the Secretary of State may compel any local authority to drain its district. I think that power must be retained in the case of very large towns, as they would not submit to be thrown into the county. On the other hand, I think the power of compelling a county to drain itself ought to be vested in a county board, by which I mean a mixed body consisting partly of elective members and partly of official members—the justices. The mode of constituting the body is a question of considerable difficulty; but assuming that body to be formed, I think that they ought to have all the powers which were vested in the Secretary of State of compelling country parishes, and places within their jurisdiction, to drain themselves. If they did not drain themselves, I think that the power of doing it ought to be exercised by the county surveyor. I also think that it would be a very great advantage if the county organization could be carried further, and if you could throw into the county for a great many purposes the small boroughs which have a separate court of quarter sessions, and do not contribute to the county rate, and therefore are not really brought into the county system. Unfortunately in England the same municipal government is very often applied to a very small place and to a very large place. For instance, there are very large towns which are municipal boroughs, with a separate court of quarter sessions; there are also comparatively small towns which are municipal boroughs, with a separate court of quarter sessions. It is very desirable that a large town with 200,000 or 300,000 inhabitants should be treated as a county; but it is also very desirable that a small borough should be thrown into the county for sanitary and many other purposes.

379. Is the body which you have in your eye something like the proposed elective financial county board?—Yes. There have been two schemes, one for electing them according to unions, and the other for electing them from highway board authorities. I think that if an elective county board were established it would be very desirable to give large powers to that board.

380. Could such a board be sufficiently permanent to be always prepared to deal with applications?—It would not, like the court of quarter sessions at present, end with each sessions—you would make the county board a corporate body. You must of course make provision for having a permanent officer to do the work, and the board itself would be as permanent as the town council, or any other corporate body—it would be a county council.

381. There would be an officer who could always be applied to?—Yes.

382. And he would have a staff of inspectors?—Yes. Instead of making it a municipal council it would be a county board, consisting partly of *ex-officio* members and partly of elected members.

383. What would be the relation between such a county board and the local government office?—My own opinion is that the local government office, or the central office in London, ought to be a consulting body rather than a body to compel the local authorities to do their work. I believe that in many cases the local bodies would gladly receive advice from the central authority on a variety of subjects on which they wished to receive information. I also think that the central body would be most useful in collecting reports from all these local bodies, which reports would be laid before Parliament.

384. Would you contemplate a different set of inspectors as being employed by the county boards from those employed by the local government office?—Yes; I should consider that a man who sustained the character of county surveyor, with whatever staff he might require, would, for instance, drain a town which refused to drain itself, in the same way as he would superintend a county bridge, and that he would not have anything to do with the central board.

385. I understand you to propose that the county surveyor should have a certain number of inspectors?—I do not know what staff he would require.

386. You do not suppose that the county surveyor would himself be able to discharge all the duties of an inspector?—I should have thought that it would have worked in this way, that supposing that I lived in a small country village, say in Somersetshire, and that the majority of the village would not drain, and that I thought that the village should be drained, I should write to the county board to that effect, and that the county board would ascertain whether my complaint was right, and that if it was right they would do the work.

387. That county board would only be a mediator between the country local authorities and the Home Office. According to your plan do you not leave the towns in direct communication with the Home Office?—I do not pretend to have at all worked out the scheme with respect to the larger towns; I apprehend that you could not satisfy them except by placing them under the Home Office, as they now are. I would place the smaller towns under the county board,

and would allow them representatives upon the county board.

388. (*Earl of Ducie.*) You have drawn a distinction between country and town districts, and you have told us that in country districts where buildings are aggregated together it becomes a common duty to provide for their main drainage. You have also suggested that in districts where there are separate buildings, it would become the duty of the owner to remove the excreta. You are probably aware that in such districts as those you meet with the greatest amount of ignorance and poverty. How could you initiate proceedings against them? Have you any suggestions to offer upon that point—how are you to deal with the lowest class of segregated buildings?—When a man builds a separate house for a labourer I think that he ought to provide it with a privy, and to take care that there is a proper place to drink from. I do not think that a man ought to build a house and to leave it without a proper privy and a proper supply of water.

389. Take the case of a cottage proprietor who builds a house for himself?—If a man built a house for himself, I would not allow him to live in it except it was built in such a manner that a human being could live in it without manifest injury to his health.

390. What authority would you suggest in such cases?—I would simply make it penal to build a house without a privy and without a proper supply of water.

391. There is no power in that respect at present in country districts, is there?—I do not think that there is.

392. Is it not the case at present that there is not sufficient power?—There is a power given in the Sanitary Act of 1868, by section 4, which incorporates the 51st section of the Public Health Act of 1848. There is also the 13th section of the Nuisance Removal Act of 1855. It appears, then, that there is sufficient power to compel owners to provide their houses with privies, but not sufficient power to compel them to provide water.

393. (*Mr. Hibbert.*) I understand you to say that there are places where commissioners exist and where there is also a town council; is it really the fact that the two bodies co-exist at the same place?—I happen to know the fact in one place; I had put in a bill that the town council in all cases should have certain sanitary powers, and a remonstrance was sent to the Home Office, stating that in a particular case the bill was wrong, and that the powers ought to have been vested in the improvement commissioners. I believe that the case is not very common.

394. With respect to the country districts, do you not think that if your view was carried out, of putting the power in the county financial boards, a great difficulty would occur in large counties like Lancashire and Yorkshire as respects working over so large an area?—Do you mean that the county boards would not have power enough?

395. That they would be too unwieldy, and would have so large an extent of country to look after that it would be almost impossible for them to look after it properly?—You might divide their duties between different committees.

396. Would it not be possible first to have an elective board in every parish, instead of having separate officers to look after the roads, and that the elective board in every parish should look after the roads and the sewerage, and everything in fact connected with the health of the parish, and that one or more persons from that board would represent the township or parish upon the board of guardians. Would it not in that way be possible so to carry on the representation as to do the work by three steps, instead of working in your way by two steps?—I do not think that it would be advantageous to interpose the board of guardians between the parochial authority, whatever it might be, and the county board. I think that it would be advantageous to give the county board the superintendence of roads in the last resort; but the member of the Commission who has asked the question is aware that at the present moment the roads in most places are not within the control of the parish, but are within control of the highway board.

397. That objection would only apply to those districts where highway boards had been formed?—I think that it would be a very good thing to put the roads under a larger superintendence than that of a parish.

398. Would there not be an advantage in having an intermediate body between the parishes and the county financial boards, particularly in large parishes?—I think not.

399. Are you aware that, supposing that county financial boards were carried out according to what is proposed, there would in Lancashire be from 80 to 100 members upon such a board?—Then I would divide Lancashire into divisions for the purposes of a county board.

400. Have you any particular objection to giving any of these powers to boards of guardians?—Yes; I do not think that the board of guardians are a good body; they are fully employed in superintending the poor law, and I think that they had better be confined to that.

401. But you are aware that they act for the removal of nuisances in given districts?—Yes, but I think that that ought not to be continued; I think that it is better to place that duty in the vestries, subject to the control of a county board.

402. Are you aware that during the cotton famine the guardians of the different unions were made the persons to carry out the works in country districts?—I have no doubt that such was the case, but I know nothing about it.

403. (*Mr. Clive.*) You have stated that you do not wish for any intermediate communication between the parish and the central board?—I do not think it desirable that any intermediate body should be interposed between the subordinate local authority and the county board. I would give power to any local authority to communicate with and ask advice of the central sanitary authority in London.

404. Have you considered the minuteness of some of the parishes and the inequality of area?—Yes; I think that in some cases it would be a capital thing to unite the parishes. I would take the parochial division as the unit for the purposes of rating; but supposing that small parishes wished to unite together for the purpose of drainage, or for the purpose of water supply, or for any other sanitary purpose, I should enable them to do so.

405. Would not the omitting of the board of guardians be a good deal facilitated by the fact of the county financial board being elected by the guardians themselves?—Yes; I understand that in any scheme the guardians would have a considerable voice in the election of members of the county financial board.

406. So that any reference to the board of guardians, as a board, would be unnecessary?—Quite so.

407. In your proposal of a county financial board do you mean in any way to include the quarter sessions?—I should make the county financial board simply an administrative board, and I should consider that drainage was in the nature of administration, and not in the nature of judicial business; but wherever law intervened, for example, assuming an owner to be liable to a penalty for not draining his house properly, or for not building his house properly, I do not intend that the financial board should judge of that case, it must go to the quarter sessions as a legal tribunal. I should consider that the administrative functions ought to be altogether separated from the judicial functions, and that the administrative functions should reside in the board.

408. You said that you would make it penal for any person to erect a house without sufficient drainage and water supply?—Yes. I find that it is now penal as to drainage.

409. How is that penalty to be enforced?—I am aware that there is a difficulty in enforcing penalties.

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410. Do you not think that it would be possible, by compelling a system of tanks in every house, to make a provision for water available for every house?—I cannot practically answer how it ought to be done, but I think that, as a principle, a man, wherever he lives, ought to have access to a privy and access to water.

411. It is possible to obtain a supply of water without in every instance having an underground supply?—I presume that in many cases it is absolutely necessary to have a surface supply, but I cannot speak accurately. I conceive that in many cases you can only get surface water. In a particular parish with which I am acquainted all the underground water is tainted with some solution of a mineral, and is undrinkable, and therefore in those cases I presume that you ought to have proper tanks to collect the drainage water and the surface water.

412. And that would dispense with the necessity of water supply from below?—Certainly; I did not intend to give an opinion as to what water ought to be supplied, but only that there ought to be a supply.

413. (*Dr. Acland.*) You seem to infer that this Commission ought hardly to lay down rules except as to drainage and water supply?—What I meant to say was that I should not upon my own judgment advise the Commission to go into a consideration of the various systems of water supply.

414. I quite understand that: but I understood at the outset of your evidence that you said that there was a difficulty in laying down the law upon other points. In the latter part of your evidence you have spoken much of the construction of the boards which should be administrative boards for particular purposes. The real object of my question is to learn whether there is any objection to our pointing out what should be the duties of boards of that kind, and especially of inspectors, or persons appointed to see to the execution of those duties. Are we not competent to lay down, and is it not absolutely necessary that we should lay down, what those persons are to do?—As far as my judgment goes, I should consider it of great value if the Commission would lay down general rules as to the duties to be performed by local bodies and their officers; but it would not be advisable that they should go too much into detail.

415. You did not mean to express to us that there was any difficulty in laying down the principles of the duties which are to be discharged. Would it not be desirable that we should consider also the qualifications of such officers?—Certainly.

416. As, for instance, if they are charged with sanitary duties, as gentlemen under the Poor Law Board are constantly charged, should we not endeavour to point out what kind of knowledge such sanitary inspectors should have—whether it should be engineering knowledge or sanitary knowledge? There is, I presume, no legal difficulty in our defining those qualifications?—There is no legal difficulty whatever in defining any qualification.

417. (*Mr. Lambert.*) I understood you to say that you considered that the law is generally sufficient at the present time for the purpose of enforcing the necessary works of general sewerage and drainage?—I consider that the powers are sufficient, but I consider that the power of enforcing them, which is vested in the Secretary of State, is in many cases not likely to be advantageous.

418. Do you consider that the power is sufficient as laid down by the law, supposing that the local authority discharges its duty?—Yes; I think that if the local authority is ready and willing to do its duty, it requires very little more power than at present.

419. When you speak of the general law, I suppose that you refer to the general statutes, and that you do not refer to local Acts?—No, I do not refer to local Acts, as a general rule, but in many towns the general Act is excluded, and they are worked under a local Act. Speaking generally, I think that if a town is willing to do its duty as regards the sewerage and drainage, there is quite power enough.

420. Are there not a large number of towns which are not under the general law in that respect, but under bodies of commissioners?—No doubt there is the greatest possible difference in the governments of towns.

421. I believe that those commissioners have the power of incorporating any portion of the public Acts in their local Act, if they think proper to do so?—I think that they have the power of adopting the Local Government Act. Under the 15th section of the Local Government Act no doubt such commissioners might adopt any part of the public general Act.

422. Will you refer to the section and state what process is necessary for that adoption?—They can adopt any part of the Act by passing a resolution, which resolution is to be forwarded to the Home Office.

423. They can incorporate within their own Act any portion of the public Acts?—Yes.

424. The consent of the Secretary of State is not necessary for any such incorporation, but the local authority can legislate so far for themselves?—So I understand the clause.

425. Can you state whether this section has been acted upon to any extent by local authorities?—No, that is not at all within my cognizance.

426. It is not necessary I presume that there should any record of the adoption of the general Act, beyond the minutes of the body itself?—I presume that the Home Office keeps a record of the resolutions which are forwarded to it, but it is not essential under the statute. There cannot be an easier process. I take it that improvement commissioners, if they choose, can adopt any portion of the Local Government Act.

427. But you are not aware to what extent this provision has been acted upon?—I am not.

428. With regard to the administrative body, I understand you to say that you consider that there should be three such bodies, namely, the town council in boroughs where there were town councils, in other towns commissioners, and in villages or rural districts some other body for the administration of these laws?—Yes; I think that the natural body in a borough is the town council, that is the governing body. Where towns are under improvement Acts, the natural body is the improvement commissioners. Then in parishes there is no local body left except the vestry.

429. You consider that where there is a town council they should be the local body?—I think so.

430. If the town council acted as a local body they would simply act for the municipal area?—Yes, they could not go beyond the municipal area.

431. Is it not the fact that many towns have largely increased beyond the municipal areas?—Yes, and I believe that there are cases in which the improvement commissioners have a wider area under their government than the town council.

432. Supposing that the town council is to be the governing body in a municipal borough, it would be necessary to extend that municipal borough, so as to include the adjacent portion?—No doubt. I have no doubt that there are within your knowledge places in which it would be impossible to vest the powers in the town council, and in which they must be vested in the commissioners, because they happen to have a wider area.

433. I apprehend that it would be necessary to put the whole of the district under the town council, and therefore to enlarge the area?—Yes, I think that the area ought to be extended.

434. At the present time under the Local Government Act, where the district embraces not only a town but an adjacent district, the local board consists, I believe, of persons representing the town council and persons representing the adjacent district?—I think so.

435. It is altogether a separate body from the town council?—Yes. Then again in places where at the present moment the sanitary area, so to speak, extends beyond the bounds of the municipal borough, it would be another exception. Either the municipal borough must be extended to the limits of the sanitary area, or

some other body must be substituted for the town council.

436. Are you aware whether in forming districts under a local board, the fact that there is a town council has been an element in limiting the area to the municipal borough?—I am not aware of that as a fact, but there is very little doubt that it has been so.

437. Thus excluding the adjacent district from the area?—I should think that that must have been the case. I may add, as a correction of my statements respecting local authorities, that no system of sanitary legislation can be efficiently carried into effect without a readjustment of the boundaries of towns, so as to include populous districts which have grown up without the actual limits, and although constituting part of the town neither share in its burdens nor submit to its control.

438. With regard to the powers of the boards of guardians, have they not the power of appointing inspectors of nuisances?—Yes.

439. And the board of guardians where it is the local authority has the same power as any other local board would have of putting in force the provisions of the Nuisances Removal Acts?—I think so, certainly.

440. With regard to dwellings in a crowded and unwholesome state, the board of guardians would have the same powers as the town council in a town has of getting rid of those nuisances?—I think there is a concurrent authority. Under the Nuisances Removal Acts the guardians have the power of removing them, and under the later Sanitary Act the vestry have also the power to do so.

441. Where the board of guardians are the authority they would have that power?—Certainly.

442. So that if a person complained of a nuisance to the board of guardians, would it not be their duty to appoint a person to inspect it and to abate the nuisance?—No doubt.

443. (*Mr. Shaw.*) There is not power at present to compel a water supply for two or three detached cottages in rural districts?—I think that there is a power of compelling a supply, but that law I believe at the present moment only enables the vestry to give a supply if they like. I do not think that there is any power of compelling the owner to supply a cottage with water.

444. Is there any power to compel a water supply to two or three detached cottages?—It is difficult to answer the question in the precise terms in which it is asked. There is a power to compel a sewer authority or vestry to provide a district with water in cases where danger arises to health from the insufficiency or unwholesomeness of the existing supply; and where a proper supply can be got at a reasonable cost. The Acts are the 29th & 30th Victoria, chapter 90, section 49; the 30th & 31st Victoria, chapter 113, section 2; and the 31st & 32nd Victoria, chapter 115, section 8. But I do not think that under those provisions you could compel a sewer authority to supply one or two cottages alone with water, provided that the remainder of the district was properly supplied.

445. Then your suggestion would be that there should be a power to compel the owner to give a water supply?—I think that at all events in cases of new cottages the owner ought to be compelled to provide a supply, or to see that there is a supply before the cottage is passed as being fit for a human being.

446. Would you propose to give a like power to that which is given by the Metropolitan Act in respect to drains, namely, that when any person builds a new house he must give notice to the vestry, who send their surveyor, and if the surveyor sees that the person building the house has not complied with the requirements his building is liable to be pulled down?—I do not think that such a stringent provision is necessary. I think that if you were to put on a fine, or to make it possible for the local authority to come in and do it, in case of the party omitting to do it, that would be sufficient. Speaking generally, I think that it is enough to make an enactment to the effect which I have mentioned, and to allow it to be carried into effect by doing the work and charging the owner.

447. Is there any power to close a poisonous water supply? Have the local authority any power to stop up a well or pump which acts injuriously to health?—I do not think that there is such a power; it would be advisable to have such a power, but I presume that there would be great difficulty in ascertaining what water was poisonous.

448. Would your proposed power to the local authority as to cottages include anything as to ventilation?—I do not think that I have sufficiently considered the question to give an answer.

449. The power at present is very vague, would you give power to the local authority to lay down bye-laws?—I do not think that I would do so in the country.

450. As regards the vestry being the local authority, I think that in one of the Acts the power was given to the vestry, and then that power was afterwards transferred to the guardians by the Act of 1860. The Act of 1855 gave the power to the vestry; and I think that there is power in that Act to delegate those powers to a committee of the vestry?—I cannot answer your question. I dare say that the powers were transferred, but with respect to the vestry there would not be the remotest difficulty in making them a permanent body, and in making them subject to the county board.

451. (*Mr. Richards.*) You have stated that you consider that local authorities desiring to perform their duty have at present sufficient power to construct necessary sewers?—Yes.

452. How would a case of this sort be provided for under the law? Assume a street of houses, and that there is a public sewer running through the middle of the street, and that eight houses are to be drained. No. 4 belongs to a different owner from No. 3, and the engineer lays down his plan of a public sewer through the street, and a subordinate sewer at the back of the houses. Under what Act of Parliament can the owner of No. 4 insist upon passing through the ground of the owner of No. 3?—No power is given to one owner to go through another man's land in towns to reach a sewer, and it might be advisable in future legislation to meet the case suggested by you by empowering the local authority to make the necessary communications between the houses and the sewers.

453. (*Mr. Clive.*) Is there not an analogous power to it in the Drainage Act?—I believe that there is.

454. (*Earl of Romney.*) In the Agricultural Drainage Act is there not such a power?—I believe that there is. I am not aware of there being any power in towns by which the owner of one house can carry his drains through the private drains of another house.

455. (*Mr. Richards.*) Although the engineer may think it a desirable mode of drainage that a subordinate sewer should go at the back of the houses?—I conceive that there is ample power in the local authority to acquire land to carry its own sewers, and it must take care to do so in such a way that each house can carry the sewer through its own territory; at least such I believe to be the law.

456. With respect to earth closets, do you say that every street in a small town should choose whether it should be drained by earth closets or by water-closets, or not?—No. According to the law, if three houses had water-closets and the rest of the town wished to try the earth-closet system, the owners of the houses with water-closets might say, "Under the Public "Health Acts we can compel you to make drains "which will carry our water-closet refuse away at "the public expense." In those cases it seems to me that there is a certain hardship that three or four owners should compel the town, against their will, to carry off at the public expense the private refuse of their houses; and therefore I think that a discretion should be lodged in the local authority to determine whether it will have water-closets or whether it will have earth-closets, either wholly or partially, and that

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if in that case the owners of water-closets insist upon keeping them, they should be at the additional expense thereby caused.

457. You would vest in the local authority the power of deciding whether there should be earth-closets or water-closets?—At the public expense.

458. Am I to understand you to say that if three owners in a street preferred earth-closets to water-closets, they should be exempt from the general charge of sewerage rates?—Not at all. Where the whole of a town through its representatives determine upon earth-closets, I think that that town ought not to be compelled to make sewers for water-closets at the public expense simply because there are in that town people who have water-closets in certain streets. I think that the minority should not be enabled to compel the majority to adopt water-closets against their own wishes.

459. Is there any provision in any Act of Parliament under which the Secretary of State can raise funds to do the work, where the local authorities have omitted to do the necessary sanitary work?—Yes, he has that power under the eighth section of the Act of 1868.

460. In constituting the county authority would you make it an appellate authority, or a primary authority for carrying out the works?—I should certainly make it an appellate authority, and I think that the primary authority should reside in the town or parish, or whatever the subordinate local authority might be.

461. (*Mr. Powell.*) I presume that in the answers which you gave with reference to the power possessed by the local authority to compel in each case the construction of waterclosets, drains, and the like, you did not mean to imply a corresponding power to enforce a supply of water to every house?—As far as I am aware there is no power to compel an owner to supply water to his house, but, as I before stated, there is a power to compel the local authority to supply water to its district, in the special case where danger arises to health from the insufficiency or unwholesomeness of the existing supply; and where a proper supply can be got at a reasonable cost.

462. Do you think that the same authority ought to be invested with power to keep the land in a pure condition, and with power to keep the rivers pure, inasmuch as the authority which maintains the surface of the land is under a strong temptation to get rid of the nuisance by the easiest possible mode, namely, by the water of the stream?—Am I to understand the question to be whether I think that agricultural drainage and town drainage should be in the same authority? You are aware of what are now called commissioners of sewers.

463. We will take what is now going on in the Thames valley; do you think that the city of Oxford ought to have an authority for draining itself, and also to be an important constituent of the county board which purifies the Thames; at present, as you know, there is a conflict between the city of Oxford, which has been anxious to drain itself into the Thames, and the authorities who are charged with the purification of the Thames, who say that Oxford shall not drain itself into the Thames. Do you think that the duty of keeping away all nuisances, and thoroughly draining the towns and other districts, ought to be imposed upon the authority which is also charged with the duty of keeping the river pure?—I do not possibly see how it can be imposed upon the same authority.

464. Having regard to an amendment of the law, the future law having the design of keeping towns and rivers pure, should you have one authority to keep the rivers pure, and another authority to keep the towns pure, or would you vest all the powers in the same body?—I would not make the conservancy board of a river the drainage authority of a town. I think that the conservancy board of a river ought to cover a very different area from that covered by the drainage authority of a town; for instance, the district of a conservancy board of the river Thames may extend to 40 or 50 miles; it would be quite impossible to say that Oxford, or any series of towns upon the banks of the river, should have authority over the whole of that district. In short I think that the conservancy of a river and the arterial drainage for agricultural purposes of a large district may well be vested in the same body, as is the case under the Drainage Act of 1861; but the sewerage of a town and the duties of a conservancy board ought, in my judgment, to be kept quite distinct, except in so far as a power should be vested in the conservancy board to prevent the sewerage authority from polluting the river.

465. In your answers as to a county board you were supposing a county authority to keep pure the river running through that county?—That is another question, namely, whether the county board should be the conservancy board for that county.

466. Does not it appear to you desirable that there should be some authority whose duty it should be to keep the river pure?—Yes. I think that no legislation ought to take place which should pollute the rivers.

467. Do you intend that the county surveyors should have a staff to go over the county?—I should myself not be competent to give an opinion upon that point. As far as I could judge, I had only intended that the county board should act when complaints were made, but of course if it were thought desirable to have inspectors there could be no possible objection to it, and the law would be more strictly enforced.

468. Have you considered whether the vestry would be sufficiently wealthy to be able to pay sufficient inspectors, taking the parish as a unit?—A small parish I think would not want an officer of that kind, they would themselves know the nuisances in that parish.

469. I presume that you intend to do away with the nuisance inspectors as now appointed by the guardians?—Yes. In large parishes I presume that they would appoint inspectors and proper officers, but in the smaller parishes they would not require them.

470. But suppose that poor law unions are broken up?—Then I would combine small parishes, and in effect they would form a large parish.

471. Can you state in what particulars you think that large towns require special legislation, so as to have a claim to the benefit of a local Act?—In a large town, where people are crowded together, you require a much more stringent law in the case of butchers' shops, and slaughter-houses, and noxious trades. A thing which is perfectly innocuous in a country district is destructive in a town. Supposing that you have a slaughter-house at one end of a country village with fields round it, it injures nobody; but if you put a slaughterhouse opposite my house in Kensington it makes life insufferable. A thing which is a nuisance in a crowded district is not at all a nuisance in a sparse district. Then there are a great many other questions of police and paving streets and roads. Indeed almost every town question appears to me to require a different legislation from what it does in the country.

472. I am comparing towns amongst themselves. Why should not there be a uniform code of law in different towns, instead of each town coming to Parliament for powers for itself?—Take the case of London, where we live under a much stricter law as respects crowding of streets; you could not carry that law into effect in a smaller town, because it is not required.

473. Do you think that there are reasons why local legislation should proceed?—As far as my judgment goes, whenever I have tried to make a general system applicable to very large bodies of men, and applicable to comparatively small bodies of men, I have found that a more stringent law is required in the one case than in the other, and I do not think that the more stringent law which is necessary only in a few cases should be made general.

474. With respect to what you have said as regards earth-closets I suppose that you know that there are other liquid deposits?—Yes. The only point to which

I directed attention was that a town should have the power to say what system it would have.

475. I presume that you are of opinion that there is more necessity that the law should interpose to secure efficient drainage than for water supply?—I take it that according to our present notions the first object of sanitary reform is to get rid of human excreta from human dwellings.

476. To a considerable extent might you not leave it to the tenant, and if there was no water he would not take the house?—In country districts people build houses recklessly where there is no water supply, and I should like to prevent the increase of that recklessness, which afterwards puts the community to the expense of providing that place with a water supply; but I do not think it of the same importance as drainage.

477. There is a very great nuisance in keeping swine and other animals?—That I think is a reason for making a difference in the law between large and small places. Keeping swine in London would be intolerable, but in a village I should have no objection to a man keeping his pig.

478. But it must be so as not to cause a nuisance to his neighbour?—It is a question of degree as to how far a pig is a nuisance.

479. You would maintain the law which now exists, which prevents any man from keeping a pig or other animal which is a nuisance to his neighbours?—I unquestionably would not diminish the law which now exists.

480. (*Mr. Cave.*) How do you propose that the county board, or whatever would be the central authority in the county, should oblige the vestries to do their work?—I think that if the vestry do not do the work the county surveyor must be sent, and a rate raised in the parish to pay the expense.

481. Then you would give power to the county board to send round to the different parishes to see whether there was any necessity for action, in the first instance?—I have not sufficiently considered the question to give an answer. I think that probably it would be sufficient to act upon complaint; but if not, I would give power to the county board to send down an inspector.

482. In the case of the country, I allude to parishes which only consist of farmers who would set themselves against spending money?—In that case I should have hoped that the country clergyman would have complained, but I should think it very desirable that the county authorities should, if it be thought practicable, carry on a system of inspection.

483. Will you mention a little more in detail your objection to the overcrowding Act?—I think that it is too stringent in its language. As a matter of fact that Act cannot be carried into effect in a great many places, and it is neglected. I think that a law with less stringent terms can be carried into effect better than a more stringent Act. I can hardly imagine any case in London in which poor people do not live in a house which in one sense is prejudicial to health. If they had larger houses they would be healthier.

484. You would simply enforce the law where the overcrowding was dangerous to health?—Yes.

485. Leaving out the word "prejudicial"?—Yes.

486. But you would enforce the law with respect to overcrowding?—I think that overcrowding is the greatest possible evil existing. As far as I know, if you could find proper lodgings for labourers you would resolve the most difficult problem of sanitary reform.

487. You have to choose between turning out in many cases the people altogether and too many living in one house?—Yes, they either cannot get new houses, or they must put up with inferior houses, and if you make the houses better in construction they then become dearer, and you shut out the poorer classes from those benefits.

488. There being no sort of law which will compel people to provide dwellings at all?—I do not think that that is possible. There is a law in one sense; there was an Act passed last session, namely, the Artisans and Labourers Dwellings Act.

489. That simply gave facilities?—It gave facilities to large communities to close houses unfit for dwelling, and to build others.

490. (*Lord Robert Montagu.*) I gather from your memorandum that the definition of a nuisance at common law is different from the definition which is given in the various sanitary statutes, is that so? You say in your memorandum that the definition of a nuisance at common law is "anything that is either "injurious to health, or so offensive as to detract "sensibly from the enjoyment of life or property in "the neighbourhood." None of the statutes take the definition of the common law, namely, "that it is "either injurious to health or so offensive as to detract "sensibly from the enjoyment of life or property." All the statutes regard a nuisance as that which is injurious to health?—Yes; the statute law differs from the common law.

491. Would it be well to extend the definition of a nuisance in the statute law so as to be as large as the definition of a nuisance in the common law?—The object of the statutory definitions is to bring certain specific cases within the purview of the magistrates. The sums of money involved in some of the cases of nuisance arising under the common law definition are so enormous that you could not possibly submit them to the jurisdiction of the magistrates. There are no subjects which raise so many questions as common-law nuisances.

492. Is this the reason which you would give against the assimilation of the two definitions, that the definition at common law is meant to cover cases where only large amounts can be recovered, while the definition of the statute law is meant for the jurisdiction of the justices of the peace?—It would be impossible to place within magisterial jurisdiction the questions that frequently arise at common law, because they involve most difficult questions of fact and of property and of injury to trade.

493. The statute law I suppose in no way overrides the common law?—In no degree.

494. Do you think that a consolidated statute should be obligatory, or that a consolidated statute should be permissive like the Local Government Act?—At the present moment the main sanitary provisions of the Local Government Act, or similar provisions, are obligatory everywhere; whether you should extend further those obligatory provisions might be a question.

495. Would you make a consolidated Act a general and compulsory Act, and yet insert in it some provisions which might or might not be adopted according to the wish of the locality?—I think that the drainage provisions properly so called are necessarily obligatory, but whether you should put them in a separate Act, or whether you should add to them permissive provisions is a question of how a bill should be brought in; it depends upon circumstances.

496. At page 14 of your memorandum you suggest that all manufactories set up after the passing of the Act should be summarily punished if they pollute a stream, but that all existing manufactories should be compelled in all cases to do merely what they are compelled to do by the Salmon Act of 1861, in the case of salmon rivers, namely, to use the best practicable means at a reasonable cost to render their liquid refuse harmless. Is that your opinion?—Yes.

497. Why should not existing manufactories as well as future manufactories be summarily prevented from committing a nuisance and fouling the river?—On account of the great interests involved, and the impossibility in many cases of stopping great manufactories, I would leave them to the mercies of the common law, and if you can properly stop them you may do so. The law of England allows a man after a certain number of years of user to acquire a right which is offensive to his neighbours. Probably at first there were no buildings round an offensive manu-

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factory; since then a population has grown up around the manufactory, and it has become a nuisance.

498. Is there any right of prescription against the common law of nuisance?—Practically you do not get a verdict if a man has had the user. I believe that you cannot prescribe against an indictment for a common law nuisance, but practically there is no means of stopping nuisances which have been long in operation, and I believe that it is impossible to get a verdict.

499. Then should we not alter the statute law so that you might get a verdict there as you may fail under the common law?—I think it impossible to make a general law that would be entirely satisfactory with respect to offensive trades. They must be carried on somewhere, and each case must stand or fall by its own circumstances.

499*a*. Are you aware that these very terms, namely, "the best practicable means within a reasonable cost," were put in the Salmon Fishery Act of 1861?—Yes.

500. And are you aware that Mr. Ffennell, the salmon fishery commissioner, stated before the Sewage Committee of 1864, in answer to questions 2934 and 2941, that these expressions were so vague as to make the whole Act inoperative in that respect?—I daresay that he did.

501. Then would it not be equally inoperative if we put them into a sanitary Act?—No. I think that in a great many cases, if a manufacturer thought that he was injuring his neighbours, and was liable to be summoned, he would use means to abate that nuisance. Under the Salmon Act I do not believe that it has been wholly inoperative.

502. Is there any difference between public and private nuisances?—A public or common nuisance is one which affects the public, and is a nuisance to all the King's subjects; for example, an obstruction to a highway is a public nuisance. A private nuisance is anything done to the hurt or annoyance of the lands, tenements, or hereditaments of another; for example, obstructing a private watercourse would be a private nuisance. (See 1 Russ. by Greaves, 435.) A public nuisance may be actionable as a private nuisance, if a particular person proves that he is damaged by such public nuisance to an extent beyond the rest of the community.

503. You have spoken of an authority which should be superior to the local authorities of towns, but which should still be under the central authority, and you have suggested county boards, have you not?—Yes.

504. Do you not think that for the management of a river and watershed a conservancy board would be far better than a county board?—Yes, for a river and watershed, but not for the sewerage of a town.

505. Do you think that the county boards would be better than conservancy boards?—I think not for the management of a river as such, because a river usually runs between two counties and divides the counties, and I cannot imagine that you could conveniently place the jurisdiction in a body which would only have it *ad medium filum*. As a general rule I think that a county board would not be a good river authority, for the obvious reason that generally the river is only partially within the jurisdiction of that board; but there may be cases in which a county board could properly superintend a river.

506. The jurisdiction over shipping in ports must take in a great extent of river, far more than the part within a county, for instance, 50 miles of river, as in the port of London?—Undoubtedly. If you take large ports, such as London and Liverpool, and other large ports, I do not for a moment contend that the county board should have jurisdiction over the river; on the contrary, I think that the sanitary powers over the river and the shipping ought to be taken away from the riparian towns and vested in a conservancy board.

507. Then would you not make such a conservancy board answer the purpose instead of the county board, which you were just now proposing?—In the case of tidal rivers, and ports so far as respects the shipping, I would make the conservancy board or harbour authority the sole sanitary authority. A conservancy board would in no degree perform the duties which I have alluded to of a county board, and on the other hand I would not give a county board the duties of a conservancy board.

508. I understand you to say that the conservancy or watershed board should have the control of the river with regard to pollution, and stoppages by weirs and dams, and so forth?—Yes, if there be a conservancy board, but not so as to produce a conflict between them and the riparian town authorities.

509. Could not a conservancy board over a whole watershed also take the duties of inspection and rating, and so on?—No doubt you can give a conservancy board the power of rating for conservancy purposes.

510. Do you think that a watershed or conservancy board could inspect nuisances of all sorts, and also carry out works of sanitary improvement throughout the whole river basin?—I wish to guard myself from expressing any opinion as to the propriety of appointing conservancy boards as contradistinguished from county boards. Where there are conservancy boards in ports, such as London or large towns, I can conceive that it might be proper to allow those conservancy boards a sanitary jurisdiction over ships, and over the men in the ships, but I do not consider, as a general rule, that there is any analogy between what I call conservancy boards and what I call county boards, and I cannot conceive, as a general rule, how a conservancy board is to perform the duty of a county board, or how a county board is to perform the duty of a conservancy board.

511. Then I gather from your answers that you would have neither board?—On the contrary I would have a conservancy board where required and a county board in all cases.

The witness withdrew.

(3.) Robert Rawlinson, Esq., C.B., C.E., examined.

512. (*Chairman.*) Will you state what official appointments you have held which specially qualify you to give an opinion upon the subjects of our inquiry?—I was one of the first inspectors under the "Public Health Act, 1848," and made many inquiries under that Act up to the time of the Board of Health being broken up: I was subsequently sanitary commissioner to the British army in the Crimea in 1855: A member of the royal commission which sat for about seven years, namely, from 1857 to 1865, inquiring into the best means of applying sewage beneficially for agricultural purposes: and I am now chief inspector under the Local Government Act of 1858; as also a member of the Army Sanitary Commission connected with the War Office. I was chairman of the Royal Rivers Pollution Commission, and sat during the publication of three reports, namely, those upon the river Thames, the river Lee, and the rivers Aire and Calder: I was also government engineer for the Lancashire public works, which extended from 1863 to 1869.

513. What is your present office?—Chief inspector in the Local Government Act Office. I also occasionally report for other departments. I have inspected the different waterworks over Lancashire and Yorkshire for the Home Office; and I have inspected lunatic asylum works for the Commissioners in Lunacy.

514. As inspector under the Public Health Act of 1848, how did you conduct your inspection?—The Public Health Act of 1848 was both permissive and compulsory; it could be adopted by any place, after going through certain forms, and inquiry could be made compulsory if the mortality exceeded a certain number (23) per 1,000. The Act could be put

in force upon petition from one-tenth of the ratepayers. That Act was worked by commissioners, the first commissioners being Lord Morpeth, Lord Ashley, with Mr. Edwin Chadwick, and subsequently, on the outbreak of cholera, Dr. Southwood Smith. There were four inspectors, of whom I was one. The inspectors were not salaried officers, they were only appointed for that special work, and were paid by the day. The inspectors held inquiries after notice, as prescribed in the Act, and received evidence, and the reports in all cases were published and were circulated in the district. Those reports generally concluded by recommending certain works. The inspectors being engineers, where the local authorities chose to employ them they did so and in many cases carried out the works, which created a great deal of jealousy and ill-feeling, and the end which I had foreseen came, namely the breaking up of the board.

515. Did the petition always come from the district?—Yes.

516. We may understand that generally you think that the Act of 1848 broke down from the inspectors being employed in undertaking works, and not upon salary?—At that time there was a strong out-of-door feeling upon the question of brick sewers and earthenware pipe drains. There was a strong antagonistic feeling in certain quarters against the General Board of Health, and against the views which were enunciated in minutes of instruction which were published by the board of 1848 upon water supply. Exception was taken to the inspectors, and it was said that they interfered with the regular course of the profession, and accusations were made in official documents which were libellous and injurious to the inspectors, and the government of the day broke up the board.

517. As inspector under the Act of 1858, what are your duties?—They are very similar to those under the Act of 1848. The inspectors now hold inquiries upon petition from the locality, the distinctive difference being that we do not publish any reports; and these are brief, they are simply to advise the Secretary of State for the Home Department as to whether the plans and estimates of the works as submitted should be sanctioned. The inspectors hold inquiries for several purposes. First, as to setting out boundaries to form new districts, then as to the adoption of the Act in any district, and subsequently as to the carrying out of works. Plans and estimates are sent to the Home Office, and these are submitted to the inspectors. We make inquiries into the population, as to the rating of the district, as to the mortality, and make our report accordingly. We look over the plans and check the estimates, but we are not in any degree responsible for those plans or estimates.

518. Can they be carried out without your approval?—Yes; if any boards wish to carry out their own plans out of current rates, they need not come to the Secretary of State; but if they want to mortgage the property of the district it brings them under the provision of the Act; they must come to the Secretary of State to raise that money on mortgage. If the plans are notoriously bad we recommend amendment, but we might recommend the Secretary of State not to sanction those plans, we very rarely however interfere with plans unless they are decidedly objectionable.

519. Do you inquire into the estimate?—Yes.

520. Is the work in your department increasing?—Yes, very rapidly increasing.

521. Will you state what are your duties under the Sanitary Acts and the Sewage Utilization Acts?—They are very similar to those under the Act of 1858. There are certain new clauses as to compelling works to be carried out in sewerage districts, but I have not made any inquiries as yet under those provisions, my engagements under the Rivers Pollution Commission, and under the Lancashire Public Works Act, having kept me away from holding inquiries under those recent Acts. I may say, however, that I do not agree in the compulsory clause (the 49th section of the Sanitary Act, 1866).

522. To what clause do you allude?—I allude to the 49th section of the Sanitary Act, 1866. This Act authorizes the Secretary of State, in the event of a nuisance authority or a sewer authority declining to carry out proper works, to appoint an engineer to devise, estimate, and carry out those works and to levy the expenses upon the rates. The clause has been put in force in several cases, but not by myself, and I think that if I were desired to do so I should decline the task.

523. Upon what ground?—Because I can only see as the result confusion. Under the Local Government Act there was occasionally a local board elected by an active and intelligent minority, which having the power devised works, but there was a strong majority opposed to them, and these local boards being elected annually, the majority at the first opportunity destroyed the works devised by the minority, and so brought matters into confusion; and I made a vow that nothing should force me to attempt to compel a community to do what was even for their own benefit.

524. Will you state generally your experience as government engineer, under the Public Works Manufacturing Districts Acts in 1863 and 1864, in Lancashire?—The Public Works (Manufacturing Districts) Act is based upon the Public Health Act of 1848 and the Local Government Act of 1858. The great alterations which were made were in shortening the time, and in enlarging the provision for enabling local governing bodies to undertake works not provided for in the Public Health Acts, and a great incentive was a government loan at a low rate of interest, the repayment extending over 30 years. The Public Works (Manufacturing Districts) Act further enabled local authorities to carry out private improvements as well as public improvements.

525. Was not the object of the Act with which we are now dealing to enable boards of guardians to obtain loans for public works, owing to the closing of the mills and the manufactories on account of the American war?—No doubt it was to enable the locality to borrow money from the Government at a low rate of interest, to carry out such works as the distressed men could be employed upon; and in Lancashire a very large body of distressed men were so employed. The works were devised, were superintended, and were executed by the local engineers of Lancashire. Plans were forwarded to the Poor Law Board, and upon my report were sanctioned, and the money was advanced by instalments upon my subsequent reports. This was to see that the money was applied to the purposes for which it had been borrowed.

526. How far do the operations under this Act show the capacity of local authorities to undertake those works, and to borrow money for those works?—So far as my experience went the boards of guardians did their business as well as any other bodies.

527. Did they also undertake drainage, well-sinking, water supply, and other works of that sort?—Yes, and where any local board or board of guardians could agree with any adjoining landowner, they undertook works of land drainage and other works.

528. Will you name the cases in which boards of guardians have undertaken works?—The details are given in the Final Report on Public Works, Lancashire, 1869, and I am not aware that there has been any failure in any instance on the part of the guardians.

529. What was the largest amount of money expended in any case by any corporation or board of guardians?—Accrington expended 197,000*l.*; Bolton borrowed 177,974*l.* and Blackburn borrowed 184,000*l.* Manchester borrowed 155,000*l.*, namely, 130,000*l.* for water supply, and 25,000*l.* for sanitary purposes. Stockport borrowed 59,396*l.*; 25,493*l.* for sewerage works, 28,883*l.* for road and street improvements, and 5,000*l.* for other improvements.

530. Have you any other remark to make as to the bearing of these Acts?—No, excepting that I think that there should be a consolidation of the Sanitary Acts, leaving out the compulsory clause requiring the Home Secretary to devise works, find the money,

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execute the said works, and levy rates to repay the same.

531. As you have been a rivers pollution commissioner, what opinion have you to offer as to the formation of conservancy boards?—The river pollution question is necessarily a complicated question. In the reports we, however, went very fully into that subject. (See Third Report.) This (No. 1) is a sketch map showing the area of the river Ouse. The part coloured pink is the Aire and Calder. It is a part of the Ouse basin, but it is a distinct watershed. No. 2 is a geological map of the Aire and Calder basin or West Riding district.

532. To what river basins did that report refer?—The report which I hold in my hand, No. 3, is a report upon the Aire and Calder rivers, the seat of the great woollen and worsted trades of England. No. 1 map shows the Ouse basin. No. 2 map shows the geology of the Aire and Calder. No. 3 map divides the Aire and Calder district into 10 conservancy boards, having the principal town in the centre of each district, the areas and the population being given upon the map. My idea is that the whole of England should be put under a national conservancy board, but that the several river areas should be put under sub-conservancy boards, comprising (for large rivers) the whole watershed of each river, but where there are small rivers, or in agricultural districts, there should be a conservancy board for a combination of smaller rivers. I think that where the great trades are carried on, as in Yorkshire, upon the Aire and Calder, and in Lancashire, upon the Irwell and the Mersey, and also in South Wales, and upon the Trent, you should subdivide river areas; and that to adjudicate upon all questions connected with conservancy laws there should be a board to prevent the abuse, pollution, and nuisances which now take place in rivers.

533. Then I understand your scheme to be a scheme for the local government of the kingdom by conservancy boards?—No, not exactly so. Local government for sanitary purposes should remain as at present. Conservancy boards must be established for conservancy purposes, but where there can be mutual assistance there should be the combining legal authority. You have the basis in the Local Government Act; as in every town under sanitary law you have a local board, but whose limits are confined to a defined area, comparatively small as compared with the river drainage area. For instance, No. 4 map is a map of the river Calder, having Huddersfield as its principal town in its watershed. That is put in to show how complicated this question is; but in my opinion Huddersfield should take in that district; and in the evidence of Mr. Abbey, the surveyor, all the details are collected which have reference to that special area.

534. I think that you stated that the boundaries of such a conservancy board, would not, in many cases, coincide with the local board limits?—No.

534. Would you not have considerable difficulty in raising rates within such an undefined boundary?—I think not, because it would become a defined boundary.

535. That is to say, the watershed?—Yes.

536. But it is not now defined?—I agree that it is not defined at present. In this district (Huddersfield) there are many local boards, and I think that you should leave those local boards intact. Let them administer their own local affairs, but let them be represented in the larger conservancy board. At present, although there is the common law of the land, which ought to prevent nuisances, we know that in these districts the common law of the land is neglected, and that many riparian owners choose to exercise their authority to their own benefit and to the injury of everybody else. I would abstract from the riparian owners any power which interferes with a public watercourse, which I did not consider also beneficial to others. A man now interferes with a stream, fouling that water, polluting the stream, to the great injury of everyone below him.

537. What would be the advantage in your mind of referring to an entirely distinct board for the prevention of the pollution of rivers, all the subjects of local government, rates, and so on?—I do not propose that you should mix up the two; but I would let the local boards in each of these towns be represented on a conservancy board, and I would have justices *ex officio* members.

538. Do you see any advantage in that special board, formed for the prevention of pollution of rivers, exercising the duties of ordinary government?—The conservancy boards would not exercise the ordinary powers of local boards of health, which are now confined within their own small areas. I would in some cases make a special conservancy board for each river area or combined river areas, and in other cases subdivide where population and manufactures are dense.

539. For what object would you make such a board—for anything besides the pollution of rivers?—Yes. The enforcing of the smoke prevention clauses of the Act of 1866; as an inspector of water pollutions may also inspect air pollutions at the same time, and the repressive power would not, as in town councils, be administered by those who most offend.

540. (*Earl of Romney.*) I understand that you were sent down to Colney Hatch to inquire into the system of earth closets?—I was; the justices proposed to take out the water closets and substitute earth closets. Before the Commissioners would sanction that, they submitted the whole scheme to myself and Mr. Howell, the architect, and we examined into the question of earth closets, as to whether they were appropriate for such purposes, and we reported to the Commissioners in Lunacy.

541. What was the effect of your report?—The effect of our report was that earth closets, as designed, might be a greater nuisance. The ordinary hopper earth closet is, for public purposes, a failure in many places.

542. (*Lord Robert Montagu.*) Your whole proposal I suppose rests upon this, that you would substitute natural boundaries for the present conventional boundaries, which have had their origin in mere accident hundreds of years ago?—Certainly.

543. Would you give the conservancy board the power to make arterial and town drains?—Arterial drains, but not town sewers. I would submit plans from the local board, for the sanction of the conservancy board.

544. Just as the vestries in London do as regards the Metropolitan Board?—Yes.

545. (*Mr. Cave.*) In what manner would you deal with mill-owners in these watersheds?—I would put them under restrictions that they should not discharge refuse as they do now. Their excuse now is that they take mud with the water from the river and that they send it back, but the result is that they foul the stream.

546. Is not the existence of mills prejudicial to the river?—Mill dams and ponds do injure rivers, and block land drainage in very many places, and in the West Riding of Yorkshire, as in Lancashire, as also in South Wales, there can be no question that many manufactures block with solids and pollute with fluids.

547. I mean as regards damming back-water?—It depends upon the character of the district.

548. Would it be very difficult for such a body as this to raise money for such a purpose?—I think not.

549. In the Lee River Act is there not such a power?—Upon the river Lee the mills have been from time to time bought up; there are some upon the Stort navigation, and no doubt those mills will be dealt with by removing them.

550. How is the money raised for carrying out that Act?—By tolls upon the navigation.

551. There is no rating power?—No, no adjacent land rating power, and that is the great defect in the Thames Conservancy Board, namely, that they have not sufficient funds to carry out what is necessary.

552. (*Mr. Powell.*) When you say that you would leave out the compulsory clauses, do you mean that you would leave it optional, or that you would give the power to the Home Office?—From my experience I think that you cannot enforce those executive clauses; for instance, supposing the Home Secretary sends down an engineer to devise and to carry out works in a parish, he must estimate the cost of those works, and the money must be provided. I have had experience enough in engineering to know that no man can estimate what sewerage or water works will cost within anything like the ultimate price. They differ from 25 to 300 or 400 per cent. When the Secretary of State has been advised by his own engineer that the cost of works will be 10,000*l.*, they may perhaps cost 30,000*l.* Estimates are doubled and trebled, and sometimes quadrupled, and the parties may then say, "we decline to pay for such work."

553. By what machinery do you propose that the watershed area which you describe should be set out by metes and bounds?—There will be no difficulty in defining watershed areas upon the Ordnance map.

554. Would you not want an officer of some kind?—The Ordnance surveyors would do it very rapidly.

555. I presume that you are of opinion that you must have authority to keep the rivers pure, and to see that the regulations are carried out?—Yes, you may constitute a conservancy board by taking one or more members from local boards, who, with elected riparian owners and certain nominated justices, may constitute a conservancy board, which shall have jurisdiction over a distinct area.

556. In the River Lee Conservancy Act the chairman and other members were made members of the board?—Yes; but the authorities of the river Lee being a trading body are very different from the authorities necessary for other rivers. Every gallon of the water of the river Lee is appropriated.

557. Would you give the same power to these bodies over the same district. The duties of a conservancy board will be modified by the character of the watershed. On the Lee some part is navigable and another part is unnavigable?—Parliament has given the River Lee Commissioners jurisdiction over that whole area, and that is the first instance in which Parliament has given conservancy power over an entire river basin.

558. Where the river is navigable there are restrictions against placing obstructions, and so on?—Yes, and there is a provision at Luton that works above the intake shall be made to clarify the water by the best possible means.

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559. Are you aware that you last year gave evidence to a rather contrary effect?—I gave evidence to the effect that above the intake of the water for domestic purposes by the New River and East London Waterworks Companies, the sewage should be passed over land for irrigation purposes; but that below such intake, abstraction of solids and clarification by the most approved chemical means should be sufficient. I gave the strongest evidence against the admission of even chemically clarified sewage at Luton above the intake of the New River Company.

560. Have not the efforts of the Home Office been very ineffectual in curing smoke?—We have not had much experience as yet. The Smoke Act specifies that smoke shall be prevented, and any person may petition the Home Secretary, who is to institute an inquiry. That Act is in force throughout the whole kingdom; but to expect that members of local boards and of corporations, the majority of whom are smoke makers, will carry out the provisions of the Act, is too much. The county police, in my opinion, should be made the smoke inspectors, and wherever there are stipendiary magistrates, I think that they should settle all such cases.

561. Under the 49th section of the Act of 1858 the local authorities can be compelled to carry out that smoke clause?—The smoke prevention clause is in one of the recent Sanitary Acts. We have had several inquiries under it. I made an inquiry at one place, but the mayor would not attend. Nothing is easier than to prevent smoke, if the proper regulations are carried out, but it is more a fireman's question than anything else.

562. In the conservancy board you think that there should be the principle of combination rather than of separation?—It would depend entirely upon the extent and character of the watershed.

563. Suppose that these different bodies declined to act together, you could not force them to do so?—If you make it legal for them to constitute themselves into a local conservatory board you would have the same machinery as you have now.

564. Supposing that they declined to act, could you compel them to do so?—I think so.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 3rd May 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, R.E.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JAMES PAGET, Esq., F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

(3.) ROBERT RAWLINSON, Esq., C.B., C.E., further examined.

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565. (*Mr. Powell.*) In speaking of the great conservancy boards and the subordinate boards you have not in any way defined the powers that you propose should belong to those two classes of authorities—are you able in a short compass to sketch out the powers which you would propose to give to each?—I think not in evidence, because the duties would be new, various, and of so important a kind, that I should not like to venture to give such information in evidence. I did sketch out in preparing the Aire and Calder report my notions of those duties, but they were not embodied in that report, as it was decided that the Commission should continue the inquiry and go on with the Lancashire district; but I may say generally that my notion of the duties of conservancy boards would be this—that they would not necessarily be mixed up with public health duties, but would have jurisdiction over an entire watershed. Then, where the area was large, and complicated with manufactures, it would be broken up into sub-conservancy districts, and the subordinate boards would have jurisdiction over one such sub-area and would have

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control over the waters, and over works situate upon those waters; this sub-conservancy board taking cognizance of riparian rights as they now exist. Rivers and streams are frequently the divisional lines of townships, parishes, and counties, and they are frequently the divisional boundaries of properties; but streams are constantly altering, wasting one bank, and making another; and there is no generally recognized law to rectify such altered boundaries, or even to stop a man from abusing his riparian right as he thinks may be to his own advantage, although to the disadvantage of his neighbours. For instance, in Wigan, a man assumes that his boundary is in the centre of the river Douglas, and he builds a mill upon that centre line, thus occupying half the bed of the river. Now there is no constituted local power that shall step in and stop him from doing that absurd thing; and if the opposite riparian owner exercises the same right, of course the whole stream is blocked up, and therefore I think that conservancy boards should have separate and special powers distinct from those of local boards of health.

566. Speaking generally, was not this your idea, to give to the sub-conservancy board complete authority over its own district?—Over its own district, and if possible and practicable, I would give it authority over all dams, retaining-walls, sluices, and river-works, even though on private properties, because such works affect the main stream.

567. You would give, would you not, the conservancy board something in the nature of an appellate authority, saving certain exceptions, over the sub-conservancy board?—Yes, in cases of dispute and also for works; for instance, parties might appeal to the superior board, just as in the case now of the Local Government Act. If works are to be carried out they are devised by a local surveyor first, and when matured by him they are sanctioned by the local authority, and when the district property has to be mortgaged for money to execute the works, plans and estimates come to the Home Office for sanction; there is then an independent inspection by the inspector, and the sanction of the Secretary of State before the money can be borrowed; but if any local board wishes to carry out sanitary works or works of any kind, and the Secretary of State vetoes the plans and estimate, that board is at full liberty to carry out those works by levying the cost through a current rate.

568. You would probably consider that there would be some works of a structural character affecting the whole stream which should generally be first planned by the conservancy board?—No doubt, as for instance, on the Aire and Calder, or on the Mersey and Irwell, supposing it should be considered necessary in the locality that there should be an intercepting sewer to run parallel with the course of the main river to pick up at all the various points the numerous pollutions that now pass into the stream and pollute it, the chief conservancy board would have to combine all the districts, and would have to devise a rating area over which to levy a rate for the cost of the construction of the work, and the conservancy board would have to superintend the execution and the maintenance of such a work, and that would, necessarily, come before the main conservancy board. The sub-boards might devise and the main board consider and sanction or veto any scheme submitted.

569. In dividing the country into watershed basins with a view to the action of conservancy boards, would you place under the same conservancy board the valley of the Ouse as you have shown it in your sketch map in the report, together with the Aire and Calder, or would you place under one conservancy board the basin of the Aire and Calder alone, dividing that district of the Aire and Calder into sub-conservancy districts?—My idea is that the entire area of the Ouse basin, large as it is, should be under one river Ouse conservancy board governed as a county is governed, elected magistrates, elected riparian owners, and the chairman of each local board of health electing one-third of the conservators, and then that you should subdivide that larger area into practicable working sub-areas.

570. Do you propose any communication between these sub-conservancy boards and the sanitary authorities in the different towns, so that each authority may know what the other is doing?—Yes; I imagine that where, as in the Aire and Calder, and in the other great manufacturing districts when they are divided into sub-conservancy districts, the sanitary authorities of that district shall be represented upon the sub-conservancy board, and the surveyor of that sub-district may, if appointed, be also surveyor for the conservancy board of that district, the duties being analogous and similar. The inspectors of nuisances may also be the officers of both boards.

571. (*Mr. Richards.*) You heard Mr. Thring's evidence on Thursday, I think, and his reply to a question which I asked him as to the sufficiency of the powers for drainage; are you of the same opinion as Mr. Thring that the powers already in existence are sufficient?—I assume that question will have reference to combined back-drainage. There are not sufficient powers in any Act of Parliament giving the local board authority to execute combined back-drainage. I know that many places have been fettered in the attempt to carry it out, but my opinion is, that it would be a very proper authority, and might be exercised with very great advantage to the locality, saving money and giving efficiency to house drainage works.

572. Can the system of subordinate sewers be properly carried into effect without such power?—No; excepting at a very large cost and very great inconvenience. If you do not drain the back premises by the back way, each back premises must be drained through each person's property, through the basement beneath the floor, which is a most expensive and a very improper sanitary mode of doing the work.

573. You have spoken of the mode in which money was lent to the distressed manufacturing districts under the Public Works (Manufacturing Districts) Act, 1863; are you of opinion that if local boards could obtain money at a similar rate and upon similar conditions it would be a great incentive to local authorities to carry sanitary works into operation?—It would. The very fact that money was advanced in Lancashire at a low rate of interest, not only facilitated the carrying out of works but was the great incentive and inducement to that extent of work being carried out; and I know many places now where they are hindered from attempting works because of the difficulty of borrowing money upon reasonable terms. If they are forced into the open market they must in the face of a low rate of interest in other places pay five per cent., and when it has to be returned within 30 years it becomes a heavy burden upon the community. Then if they attempt to borrow it on easier terms they have to break up their loan into small bonds, made renewable at short intervals, and that entails so much book-keeping, so much collecting, and so much trouble, that that it is risky and expensive. The simple action of the State in advancing the money to Lancashire at 3½ per cent., and advancing it in the manner that it did, gave facilities to local authorities to carry out sanitary works. They have carried them out, and they have expended nearly 1,800,000*l.*, and if the Exchequer Loan Commissioner were asked the question, you would find that punctually, quarter by quarter as the terms come round, every local board is paying its current interest and is repaying its equivalent portion of the capital. I may state, however, that notwithstanding there is a strong objection by some government officials to making the government a banker for the country; there is a feeling that it should not be done; but I consider that the consequences of a neglect of sanitary works have been and are to foster vice and crime, and that it cannot be straining the duty of the State to lend money at a low rate of interest to promote works which shall diminish these forms of evil.

574. Do you think that it would be desirable to intrust local authorities with more general powers than they have at present over waterworks companies, where it is desired that water should be used for

sewerage purposes or for flushing purposes?—I think that it is of the greatest possible advantage to enable local authorities whether corporations or local boards to be the possessors of their own waterworks, and that the State should give them all necessary facilities for acquiring such public works. At present, as the Commission is aware, the law makes it very difficult for a local board to establish waterworks if there are any established rights in the way; and I do not exactly see how you are to make it different, as persons who have vested interests must be paid such sum as an arbitrator may award; and I cannot see my way to reducing expenses excepting by aiding local boards to acquire those works, even at an extravagant price, by a loan at a low rate of interest, the security for which shall be ample, and on which loan there shall be no loss to the State.

575. You have stated to the Commission generally that you object to putting compulsory powers into operation where local authorities have neglected to do works that may be considered desirable for their localities; are you of opinion that if the appellate authority were removed from the Secretary of State to a county board that would mitigate the objection that you have?—My objections to the compulsory powers that were spoken of when I last gave evidence simply go to this, that the 49th Section of the Act of 1866 makes it imperative upon the Secretary of State, if required, to appoint an engineer to devise works and to execute them. It enables him to raise money for the carrying out of those works, to appoint a receiver, and to levy the rates over a period of 30 years, or as far as the loan extends. My answer must go to that single clause and to those powers. There will be very great difficulty in carrying out that clause, because serious complications come into all operations connected with main sewers and waterworks. The first difficulty would be for the Secretary of State to find a proper and fit person. In the second place, when he has found that proper and fit person, and such engineer has estimated the works, though he may be the ablest man that ever devised works, the weather or the subsoil, or something or other connected with those works, may make them cost several times as much as the estimate, and then how the Secretary of State through his appointed agent is to levy an extravagant rate over a number of years upon an unwilling community without very great torment and trouble, I cannot imagine. But if such powers are delegated to a local representative body answerable locally to the ratepayers, and the Secretary of State has merely the legislative power of putting the machinery in motion, you may give him the power of fining the district if it will not carry out proper works, fining the ratepayers continuously, week by week, until some local authority executes the works; then I think you may get over the difficulty; but you cannot in my opinion make any Government department of this country executive without risk (nay certainty) of money losses and of doing mischief directly and indirectly.

576. (*Mr. Bircham.*) Your objection to compulsory powers of that description would be rather from the difficulty that the central executive body would have in enforcing them?—Yes, as if you make a state department executive it must bear the responsibility, and that will, in my opinion, inevitably entail loss upon the state in attempting to carry out works.

577. You are probably of opinion that there must be some compulsion resting somewhere upon a district?—Yes, you have compulsory powers spread through the different Sanitary Acts, which can be put in force by the local authorities which represent a district, and I have not one word to say against those powers.

578. There is no such general local authority now, I believe?—There may not be in all places. You may say that some places suffering from preventible disease and where works are required refuse to set up a local authority; even in such cases I cannot see my way to a government board devising and executing works.

579. My question had more particular reference to rural local government. A sewer authority is in existence in every parish?—Yes.

580. And therefore there is a local authority there to act upon; they cannot refuse to be in existence?—If you can take the bench of magistrates, or the guardians, or any recognized local authority, and having armed them with power to put the Act in force and to levy rates, so as to relieve the Secretary of State from all but the legislative power, then I say do it, but do not require the Secretary of State to appoint engineers to supersede and override local authority and local obstinacy, to be in fact the executive.

581. Do I understand your view to be this—that the last resort rests in the wrong hands?—I think that the power in the 49th section will be found to be unworkable.

582. You would be of opinion that there must be some compulsory power resting either locally or elsewhere?—Yes; I would take those powers first as they stand, but I would shift the executive power somewhere else away from the Home Office.

583. Do you think there would be the same sanction if the district or the local body were carrying out the power which you deem so offensive, in comparison with its being carried out by the central authority of the kingdom?—Taking it generally I should say that the greater proportion, far more than a moiety, of local feeling, would be strongly in favour of having the execution of their works forced upon them by some local authority rather than by a government board.

584. If I understood your plan of the distribution of the country for health purposes, you propose that it should be divided very much according to the watersheds?—No, I beg pardon, that is not my opinion in any degree.

585. Are the Commission to understand that the evidence which you have given has reference to the drainage and to the preservation of rivers, and not to considerations of health?—My answer with regard to conservancy districts has reference purely to the rights of water and to the area from which the water flows, and combined with that, so far as health is concerned, the prevention of pollution, but not beyond that.

586. In your evidence on Thursday I think you stated that you had no idea that the smaller watershed authority should be generally the health authority of the district?—In drawing up the conservancy scheme, I am not prepared to say that there may not be areas of that class, character, and size in which the two might not be concurrent, and in which you might not combine the two. In the large areas unquestionably you could not do it.

587. You have stated that it would be very easy for a Government engineer with the ordnance map to map out the country into watershed districts; had that answer of yours reference to purposes of health?—No, simply for conservancy and river pollution questions, and not necessarily for town local government questions.

588. Therefore we are to understand that as far as any consideration as to what is the proper unit to form the local health district is concerned, your evidence has not been applied to that subject?—No.

589. Has your experience led you to consider at all what would be the proper local authority for the health district as a unit; I am speaking of rural districts, ex-towns?—Yes; but that really is a very difficult question. As you are aware, first of all there was power under the Public Health Act, and now there is power under the Local Government Act and under the several Sanitary Acts to define boundaries for local boards, and we have been constantly doing that.

590. You have no power to group parishes, have you?—I am not fully aware what the nature of the powers are in the several Sanitary Acts. I think upon petition we could even group parishes. Supposing that a town or community has grown up in a certain situation, and that its required boundaries may run within parish and township boundaries, the operation of defining a new boundary is a simple one; you

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can take and define a boundary for health purposes with the assent of the locality out of three or four or more townships or parishes, report to the Secretary of State, and by a Provisional Order or by a gazetted Order you can make it a district within which that community has full municipal powers; that we are constantly doing, and a very valuable power it is.

591. That so far as it exists is upon the invitation of the district, is it not?—It is upon the invitation of the district.

592. Have you formed any opinion as to whether there should be any power outside the group of parishes for the purposes of local health boards?—No, I have not. I have not paid attention to that, and I am not able to answer it.

593. You would be of opinion, I presume, that the conditions of the case would be infinitely various in different parts of the kingdom?—They would. There is a power now for a parish in vestry to adopt the Local Government Act; but if a parish repudiates, then separate districts may be set up; and sometimes when a parish adopts, we are called upon to hold an inquiry in consequence of remonstrances from parties who wish to form a sub-district objecting to the larger area, and wanting to form a smaller area. We make an inquiry, and upon our report it rests with the Secretary of State to confirm the adoption for the entire parish, or to accede to the requisition of the smaller area and dismiss the petition, and allow them to define an area for themselves; but if there were a petition or memorial from several parishes, there is nothing to prevent, so far as I know, the Secretary of State from sanctioning an area as large as a county.

594. Have you formed an opinion, therefore, that there should be upon the invitation of parishes the power to group them into convenient districts for health purposes?—My answer must be general. Upon petition from the districts, yes. But I do not think it desirable, from all my experience, that there should be power to overrule the local wish and opinion of the district, as if opinion is not ripe and ready for a measure necessary for its welfare, I would leave it alone until it ripened up to this.

595. Would not the inevitable result of that be, in many cases, that there would be circumstances in which a small parish would prevent positively useful structural works in a district by refusing to join in them?—I can hardly answer that question without having the details before me. You see the powers to form outlet sewers are now very large, as if one district wishes for an outlet sewer, it can have the power of passing through another district without combining.

596. Then we are to take it as your opinion that the parish authority is, perhaps, the one which you leave as the local health unit?—In the purely agricultural districts, where the population is scattered, in short where you can have no unity of works, I think the parish authority or the parish board, as in Lancashire, might very properly have borrowing powers for sanitary works, and have executive powers for carrying them out.

597. The authority of the conservancy boards and the ordinary health authority of districts would certainly be in conflict rather than otherwise, would they not?—No, not as I have conceived that they might be framed. They must be in accord. As I have sketched it out in my own mind they would necessarily be in accord.

598. Have not, for instance, the River Lee Board, constituted all of the local commissioners, stopped every local authority, and Parliament has followed them in stopping every local authority delivering pollution into the Lee?—No; I am afraid that is not so.

599. Everything except the lower branches of the Lee?—I am afraid that is not so. I wish it were applied to the upper towns of Luton and Hertford; but these towns, which are above the intake of the New River Company and the East London Company, have the privilege, unfortunately, of passing what is called the clarified sewage into the watercourses, although those watercourses supply London with water. I fought against it in the Luton case especially, but the sanction is there in the bill. After that clause was granted it was contended by the river Lee commissioners that West Ham and Tottenham should be absolutely restricted from passing any sewage into the lower part of the Lee until it had passed over the land. That clause I also resisted. I said it was perfectly absurd to restrict those towns at a very great cost from passing the effluent water after clarification into that portion of the Lee, which is now as foul as it well can be, and which practically no engineering can render otherwise than foul after sanctioning Luton as stated.

600. Is not the general scope of that Act to prevent effluent sewage from getting into the river?—I can only say that I wish it were; I am not aware that it is so.

601. Is it not the case that the jurisdiction of the Lee Conservancy Board, and of similar conservancy boards, is in considerable conflict with the action of the riparian health authorities?—Yes, in one sense it is, but when you say other conservancy boards, I do not know what others you allude to. There are only two large conservancy boards that I am acquainted with, the river Thames and the river Lee, and they are both of them very peculiar. They both of them spring out of Acts that were in existence, and bodies that were in existence, and they are neither of them in my opinion such boards as would be established under new jurisdictions over new areas.

602. Those two boards, then, I may take it, are in considerable conflict with the health authorities upon their banks?—They are. They are armed with powers which hitherto have been inefficient. For instance, the Thames commissioners have certain clauses which say that the towns upon their banks shall not after a given day pass sewage as sewage into the waters of the Thames; but all the towns, so far as I know, from Oxford downwards go on doing it. I believe they are under notice, but how the conservators will ultimately bring them to book, I cannot exactly see.

603. The river conservators and those authorities would not make a very happy party?—Not as at present constituted.

604. I think you have been holding lately an inquiry at Kingston. Is it your opinion that such inquiries would be better in the hands of the local conservancy inspector, or in one appointed from a distance by the Secretary of State?—With regard to such inquiries as I am exercising now under our office, I do not see any objection to continuing them. We occasionally, as in that case, have to veto, or rather have to recommend, the vetoing of the petition, but it does no more than this. If the Kingston authorities are aggrieved at the vetoing of their petition by the Secretary of State, it is quite competent for them to apply for parliamentary powers through an ordinary private bill.

605. But would you prefer the jurisdiction of an inspector appointed by the Secretary of State, or one resident in the locality?—I think it is much preferable that the Secretary of State in that case should send down an independent inspector.

606. And with regard to putting the different compulsory clauses of the Act into operation, would you prefer that that power should be with a county board or with the Secretary of State?—I think with the Secretary of State, for this reason, that where a provisional order is necessary for the compulsory taking of lands, the Secretary of State has now all the necessary machinery for the passing of a provisional order, which is to the locality a private Act of Parliament; all the staff is there ready, and therefore I think that a continuance of that power would be desirable.

607. Independently of the mere question of machinery, do you see an advantage or otherwise in that kind of authority being put in motion by the Secretary of State or by the resident local authority?—The authority is not put in motion by the Secretary of

State. He only takes action upon a petition, and I think it is very usefully vested in the Secretary of State, and it may very properly be left with him.

608. With regard to your answer to question 541, is it your opinion that the earth closet is for all public purposes an entire failure?—One form of earth closet, the earth closet with the hopper apparatus, however that hopper may be intended to be worked, is as far as my observation goes a failure, for this reason, if the weather is damp the earth clogs and either sticks in the hopper or comes down in a block. If the earth is very dry it comes down in a fine dusty powder and overshoots the excreta and pervades the place in which the closet stands, and I need not say that to be inhaling dust so impregnated is not very pleasant. In India where the earth closet is used upon a large scale, this apparatus question has resolved itself into what I may term an earth latrine. The moveable box and pull-up handle apparatus has been taken away, and the action of covering the excreta with earth depends, not necessarily upon the individual using the apparatus, but it is an external and extraneous operation.

609. (*Mr. Lambert.*) You spoke of the Act of 1848, when you were examined the other day, and you stated the reason why the old board was broken up. I believe the provisions of the Act of 1848 could be applied in case the mortality of a town or district was beyond a certain number?—That was so.

610. If it exceeded 23 in 1,000, the Secretary of State could send down an inspector and apply the Act if he thought proper?—He could.

611. Do you think that that was a beneficial provision or not?—As far as my experience went it was not, for this reason. I held several of those compulsory inquiries, and the result was that the local authorities shirked the inquiry, and in one particular town that I have in my mind, the town clerk had pressing business to keep him out of the town all the time, and the officials generally had something else to do than to appear before the inspector, and of those who did appear their evidence was of the briefest and vaguest kind, so that the inquiry fell into the hands of the promoters, that is to say, of those who had put the machinery in motion; the local authority received the report with perfect apathy, and they have left it a dead letter ever since.

612. Do you apply that remark to all cases in which those inquiries were held?—I cannot, because I am only speaking of one or two which I have my mind upon, which I know myself. I am not prepared to say that in every case such apathy was manifested towards the law.

613. Are you prepared to state the proportion of cases in which those inquiries were attended with beneficial results, and those in which they were not so?—No, not at all. I am ashamed to say that I am ignorant upon that question.

614. Is it your opinion that in case the mortality should be very excessive in any place it is not desirable that compulsory powers should be exercised, for the purpose of putting the Act into operation?—Not in an executive form, but compulsory in other forms, such as the compulsory inquiry as was held when that fearful outbreak of cholera took place in Newcastle-upon-Tyne, when the Government sent down a commission of inquiry, and a nice state of things they found and reported; but I am not yet aware that Newcastle-upon-Tyne has ever stirred in sanitary matters; it remains just as it was; it has not adopted the Local Government Act; it has not put itself under any general sanitary laws.

615. Take the case of Salisbury, where the mortality amounted to 27 per 1,000, and the inhabitants themselves refused to put the Act into operation, but where an inquiry, such as we have described, was held, do you consider that the circumstances there justified the application and that the application was desirable?—Most unquestionably; but in Salisbury if the inquiry was brought about under that mortality clause, you must have had a sufficient amount of local action and intelligence to accept the Act, and then there must have been sufficient influence to get a willing board elected by the ratepayers, so as to stand in the position of representing the ratepayers, and they were perfectly justified in initiating the works and in carrying them out. That is a case in which all followed in sequence. In the first instance, an inquiry was made against the opinion of the majority, but an intelligent minority takes the matter up and works it to its ultimatum; in those cases, I think, such compulsory powers may be very beneficially left as they are.

616. I gather from you, that if there be an intelligent minority in any place applying for an Act to be put in application, you are of opinion that it is desirable that it should be so done?—Yes; but there are cases where the converse will take place of the result at Salisbury. In another town where the Act was forced upon the community, and the intelligent minority set about the works, devising main sewers and waterworks, they let their contract for waterworks, commenced their engine-house, bought their engines, and bought their mains; but before they could be put into operation the minority was overthrown; the active majority came in and upset everything that was done; they sold the engines and pipes, threw the works into confusion, and have saddled the district with nothing but the debt.

617. Are you of opinion that, in those instances, it would be desirable to have some compulsory power to compel the local board to execute and carry out the works?—No; I think such cases justify me in saying that I should be exceedingly cautious in urging upon any unwilling community compulsory measures. If I may use a sacred simile for profane purposes, I would say, if persons are not willing to receive you, you must shake the dust from your shoes and go somewhere else where they will. My whole life's experience goes to this, that you cannot compel unwilling men under those conditions, and that it is the old proverb verified that one man may take a horse to the water, but many men cannot make him drink. Yo cannot put intelligence into an unwilling community.

618. Under the existing law, the local board is bound to execute certain works and to provide proper sewers for its districts?—Yes.

619. And under the existing law they may be compelled to do so, I presume, by *mandamus*?—I assume so.

620. Do you consider it desirable that that power of *mandamus* should be continued, or not?—I would continue it. I would continue any compulsory power that is to be put in force by the representative body of the locality, that is to say, any compulsory power that the representatives of that district can exercise; and if you can arm the Secretary of State with power to compel that body to exercise its proper authority, those, I say, are the proper compulsory powers to retain.

621. Then to that extent you are in favour of compulsory powers?—Most unquestionably.

622. But you object to those compulsory powers being vested in the Secretary of State with reference to what is in the nature of a byelaw?—I object to making him the devisor and executor of works under the 49th section of the Sanitary Act.

623. But if the local board could be compelled to discharge its duty by some power or other, I presume your objection would not apply?—Not at all. I believe you might then revive very properly the use of compulsory powers.

624. With reference to the Act of 1848, you have stated some objections to it, but was any objection raised to that Act upon the score that certain officers when once appointed were permanent?—Yes. Under the Act of 1848, if the local board appointed a surveyor, the local board could not discharge him without applying to the general board. I find that the Act of 1858 has divested them of that authority.

625. Do you think that that change was desirable or not?—I do. I do not think that any advantage was gained if you attempted to keep an obnoxious officer upon an unwilling board. I held one or two inquiries

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under that clause where the surveyor got at loggerheads with the local board, and where they wished to dismiss him. They appealed to the general board, and as far as my experience went in each case, I recommended the dismissal of the surveyor. It is a very invidious duty; it is a power which a public board had far better be without.

626. Public opinion with reference to sanitary improvements has very much changed since 1848, has it not?—Very much changed in large communities, but I think I could take you into places throughout the length and breadth of the land where it is just as it was.

627. In large communities, thickly populated places, do you suppose there is much objection now to the application of sanitary laws?—I find that in such towns as Liverpool, Manchester, and Birmingham, and in many other large centres, they refrain from adopting the Local Government Act. They choose to work under their own local Acts, and to go and spend large sums of money every session in getting additional local powers which they could get for almost nothing under the Local Government Act.

628. Do not those local Acts substantially contain all the powers that are in the Local Government Act?—They very frequently embody some of those powers.

629. And they are able to do so very easily?—Yes; but still there are special powers in the Local Government Act with regard to street and other improvements, where the locality has only to schedule the amount of property for public improvements, to lodge its petitions and its plans and its notices, just as for a private Act, and then it petitions the Secretary of State, and in due course a local inquiry is made upon the spot, and the proceedings are embodied in a provisional order, and that becomes law to the district in a very simple manner, which is not taken advantage of in many of those large communities and in some small ones also.

630. What in your opinion are generally the obstacles to their adopting the Local Government Act?—If you ask them they say that they object to centralization, that is their general answer; but if you ask them to define what centralization means they cannot tell or they will not tell you; they simply object to be centralized.

631. Do you consider that there is no foundation for those objections?—None whatever.

632. There is no centralization, is there, in the case?—There is no centralization in the sense that they choose to understand it.

633. What is the power that the Secretary of State has now with reference to places under the Local Government Act; has he any other power except that of sanctioning plans and the loan of money?—Yes, he has the power of inquiry. If complaint is made that the local authority is not carrying out the works, then the Secretary of State can send down an inspector and he reports previous to advising upon the very question put to me whether he should issue a mandamus to compel them.

634. Is that the Act of 1866?—Yes.

635. You spoke the other day of the Public Works Manufacturing Districts Act, 1863, the object of that Act was for facilitating the execution of public works in certain manufacturing districts, and for that purpose advances of public money to a limited amount upon the security of local rates, and to shorten the period for the adoption of the Local Government Act; those were the objects, were they not, of that Act?—Yes, they were.

636. With regard to the local authorities concerned in putting that Act into execution, I think that the local authorities already in existence were the persons who put the Act into execution, were they not?—Yes, they were; there were no new creations, except the locality chose to adopt the Local Government Act, and many of them have subsequently adopted the Local Government Act.

637. Was there not power in the Public Works Manufacturing District Act to those places which adopted the Local Government Act to abandon it afterwards?—Yes, there was such a power.

638. Are you aware whether or not any such abandonment ever took place?—I am not aware.

639. Do you believe that there has been?—It has never come to my knowledge.

640. The object of the Act was to give facilities to existing bodies, was it not?—Yes.

641. And not to set up new ones?—Not to set up new ones.

642. With respect to boards of guardians there was a new authority set up, was there not?—I think that it was so modified as to enable them to be an executive board for sanitary works, and for road and other improvements.

643. Was that the case where no other local body existed?—It was.

644. The great bulk of the works were executed by the local authorities, were they not?—Yes, by town councils, boards of commissioners, and local boards.

645. It was only in places where there were no local boards or other local authorities that the boards of guardians adopted the provisions of that Act, and were the authorities?—That was so. There were, however, cases, where parishes included corporations and local boards, but it was outside these boundaries that the parish authorities acted.

646. Have the guardians any power under the Public Works Manufacturing Districts Act to maintain the works so executed by them?—Not being a lawyer I did not trouble myself with acquiring knowledge of the law upon that point.

647. I mean the works which would be in some instances executed by them?—Yes, of course they would, because I suppose the responsibility should be as enduring as the debt incurred.

648. It would be important that they should have the power to maintain them in that case as the local authorities?—Yes, most unquestionably a continuing power.

649. With reference to the Local Government Act of 1858, you stated, did you not, that no reports are now published by your department?—They are not published necessarily; they are in manuscript.

650. Have you a record in the office of the areas of the different districts under the local boards?—Whenever an area is set out—in fact whenever the Act is applied, it is either applied to a known and defined area, or if a new area is set out, then that area is defined, and there must be both a plan and a verbal description of it in the office; and there are such plans and such descriptions.

651. Would there be any difficulty in marking upon the map the areas of the various local boards?—No, I think not.

652. A question was asked you with reference to constituting the vestry the power for sanitary purposes. Do you think it would be less objectionable to adopt the vestry, or do you think it would be more appropriate to adopt the vestry of the parish or the board of guardians for that purpose?—I am afraid I cannot answer the question, for I am not learned enough in the law, and I do not know sufficient of what a vestry is or its powers.

653. A vestry is a parochial body representing a particular parish, do you think it desirable that that body should be confined to the parochial limit, or that it should be extended to the whole union?—That would depend entirely upon what is to be done. I have recently been holding an inquiry at Hatfield, where a vestry had adopted the entire parish of 13,000 acres as the district for sewerage purposes, and there was another party that wished to confine the area to something about 24 acres, immediately round the town. At the inquiry I recommended a modified area, which they have adopted, which is about 1,000 acres, including the town as a centre. Then the vestry becomes the local authority for executing the powers within that area.

654. That is a populous district, is it not?—It is the town of Hatfield.

655. But speaking of ordinary country villages, would you consider it desirable that the guardians or that the vestry should be the local authority?—I would prefer the guardians.

656. Is there not an indisposition on the part of people residing in the same parish to complain against each other?—I cannot answer that question.

657. Will you state why you prefer the guardians?—Because they are an elective body, and they have analogous duties to perform. Inquiry is made in their board room, and they have to discuss and talk over those matters, the question of boards of health, and the question of sewering and water supply of course very nearly concerns the question of the relief of pauperism, because in many instances they might prevent the very disease that they are called upon to relieve as guardians.

658. Are you of opinion that there is a personal knowledge and authority in the case of a board of guardians which does not exist in the vestry, where a place is not under a local board?—I believe so.

659. Do you know whether they have any borrowing power at the present time?—I do not know.

660. Do you think that where they are in circumstances in which a pecuniary aid is desirable they should have borrowing power as in the manufacturing districts?—Yes, I think so.

661. Do you know whether any difficulty has been experienced by boards of guardians in carrying out sanitary works, in consequence of their limited powers?—No, I do not.

662. (*Dr. Acland.*) With reference to your large conservancy boards, I think you gave them limited functions, and as I understood you, only engineering functions. Could you say exactly what duties you would assign to them?—No, I could not in evidence. It would require me to have the facts before me, and to deliberate more quietly, and to look again and again at what I have written, before I could be answerable for defining the duties of conservancy boards.

663. There are several sanitary functions which must be committed to some public body, besides directly engineering works, such, for instance, as registration of disease, superintendence of epidemics and of vaccination, and the appointment, perhaps, of analysts for water, for food, and for other purposes; have you considered to what board or boards you would consign those duties?—To the local government boards where they exist, or to any sanitary boards under any sanitary Acts, and where they do not exist then to the parish authorities.

664. We have already two sets of officers connected with public health placed universally through the country, namely, registrars of births and deaths, and union medical officers; have you given any attention to the registration areas under the registrar general as being useful for administrative sanitary purposes?—Registration areas as they are now set out and used are practically useless, and in many instances mischievous for sanitary purposes as regards towns and local boards, because a registration area is not necessarily either the municipal area or the local board area, but it is some area that is neither one nor the other of those. The registrar general gives returns in his quarterly and in his annual report of outbreaks of disease, which we know arise from bad sanitary regulations, such as typhus, scarlatina, and diphtheria. We will take one or two instances. Say it is Worthing. Now Worthing prides itself upon its sanitary character, having carried out good works for water supply, sewerage and sewage application, but it finds itself tabulated by the registrar general as being liable to diphtheria, to typhoid fever, and to other diseases which imply bad sanitary arrangements, whereas those cases of contagious disease are not in Worthing at all. They are in the Worthing registration area, but not in Worthing town nor near it, but two or three miles away, and where the people of Worthing have no governing power. Then the registration areas mix up the mortality in hospitals, in gaols, and in asylums with that of town districts, and the town mortality becomes complicated with these, so that when you see the brief figures in the return of the registrar general they give you no sort of idea of the health of that special locality. You will have to inquire that for yourself. For instance, if you ask me to give you the mortality for any two sets of years in any towns where I am thoroughly well acquainted with the sanitary works, to see whether my sanitary works or anybody's sanitary works have been effective, those results cannot be got from the published registration returns; you must get them specially, at very great cost, from the local superintendents.

665. I presume that you would wish to have the registration of mortality in some way coincident with your sanitary districts?—Yes, I think it would be very advisable, because there is the machinery upon the spot; there is a defined area, and nothing would be easier than for the local registrar to keep the returns of mortality for the area affected by works which have been carried out, and where you have a defined area and a definite knowledge, so that you could then hope to get at accurate results. At present you cannot tell what the registrar means, excepting special knowledge is obtained at great cost and great trouble. Those returns are now very confusing. I read them sometimes with utter astonishment. I know that they convey to the public an impression that is not the true one. They convey to my mind nothing but confusion. That is no one's fault. I am not blaming any person. It arises out of the circumstance that registration areas have been taken which have now no reference to the special purposes to which we want to put mortality returns for comparative purposes.

666. Can you say whether under the Sanitary Act, or any other Act, there are ready powers enabling the local authorities to obtain land compulsorily for irrigation purposes upon really equitable terms?—I think the Sewage Utilization Acts and the different Sanitary Acts give power to get surveys made, to serve notices, and if you cannot agree you must then ask for permission to put in force the Lands Clauses Consolidation Act of 1845, and so go in the ordinary way to arbitration. The objections are as to the machinery and great costs of arbitration; but all that might be amended if any method could be devised by which the multiplicity of witnesses and the legal expenses could be saved in arbitrating under the Lands Clauses Act?—If you could nominate an assessor, and so restrict the expenditure of money on both sides, I think that might do great good. Sometimes under arbitration the first day's sitting involves as much cost as the whole of the money question in dispute.

667. Then in the case of distributing sewage by irrigation, this difficult machinery exists and costly disputes may occur now?—They may where you have to purchase compulsorily, and where you have to go to the Lands Clauses Consolidation Act, you necessarily bring in that machinery and you are liable then to all this great cost. If any person can see his way to simplifying the matter so as to render the settlement equally as equitable, I can see great room for saving litigation and saving money. Once or twice myself, when I have been holding inquiries and there have been inquiries as to whether the local authorities should put in force the powers of the Lands Clauses Consolidation Act, I have said to them, when I saw my opportunity, you are here on both sides, if you will permit me I will go out with you this afternoon, I will hear both sides, and I will settle this dispute for you, if you will be bound on both sides to take my decision. In one or two instances I settled the entire dispute in that way. It was quite optional on their part, and of course it was gratuitous on my part, but they were very glad to accept the offer to get the disputes settled. If they had gone on under the powers of the Lands Clauses Consolidation Act they must have had their solicitors on both sides, and their witnesses, and the arbitrator must have sat and heard

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the evidence, and then there must have been a decision given by the arbitrators or the umpire.

668. In your large experience in every part of the country do you generally find union medical officers and local engineers satisfactory authorities on sanitary works?—I should be very sorry to answer that question in a way that might be offensive to any persons, but my reply would be this: That as far as my experience goes, I have generally found that they are persons teachable, not necessarily competent but if you show them that you are not antagonistic to them, and are willing to teach them, you generally find that they are quite willing to learn.

669. There are many places now, are there not, such as towns in Lancashire, where the works have been so thoroughly executed that there is not the slightest difficulty in a teachable person seeing what he ought to do in similar cases?—There ought not to be. And then we have drawn up in our office suggestions, a copy of which I will put in before the commission. Those suggestions are upon works of sewerage and water supply. We do not dictate to them, as you will see if you read them; they are simply suggestions, and they are suggestions which have grown out of very wide experience, and if the local surveyors choose to look them over, and then to consult with any of the inspectors in the Local Government Act office, we express our willingness, and we always are willing, to advise them, and we always do as far as lies in our power.

670. (*Sir Thomas Watson*). The union medical officers are in point of fact government medical officers in every parish throughout the country; are those union medical officers, do you know, consulted on sanitary matters as sanitary authorities?—I have had nothing practically to do with unions, or with medical officers, and therefore I am not competent to answer the question.

671. From what you have yourself seen, how do you think the health officers should be appointed, and how should they be qualified? I mean should they be engineers, or police, or medical men, or surveyors, or men of any particular profession, or of no profession?—If by the word "health officer" is meant simply what I should designate an inspector of nuisances, then, for localities containing below 15,000 inhabitants, if there is a county police, some intelligent sergeant of that police would make the best inspector of nuisances; or you might have any other intelligent man appointed to inspect nuisances; but if it involves the duties of an officer of health, that is to say, a medical officer's duties, then necessarily you must have them in duplicate, and you must have a medical officer. I think that all districts of 15,000 or upwards would do very wisely, and might very properly be required, to appoint a local medical officer, whose duty it would be to examine the district; and in the case of an epidemic of any kind showing itself, to report the same as soon as possible, I would have an investigation in every case; and if death from typhus, or fever of that class, were reported, the officer of health or the medical officer should investigate the matter at the place where it occurred, and state in writing what in his opinion caused it, and if he could find a reason, and reported it to the local board, they might be armed with compulsory powers to remedy that mischief; because, if we are rightly informed, typhus fever and typhoid fever should not exist, and do not exist in a well-constituted sanitary district. You have no such thing as typhus fever or typhoid fever in gaols occurring amongst the people that enter and have been there for any length of time.

672. Is there any practical inconvenience that you know of attending what I believe is the present system of sending an engineering inspector from the local government office, and a medical inspector from the Privy Council?—I am not aware that there has been any inconvenience felt. I have myself on one or two occasions made joint inspections. Some of my brother inspectors have made more of them, and they will give you their opinions. We have not come into any collision; there may be advantages in many instances.

673. Do you go together generally and make a joint report?—When a complaint comes up of any great outbreak of fever, and it is considered that it would be advisable to have an inspection, sometimes a medical officer goes first, and if he finds in his opinion that it is connected with works or with a want of works, he then reports to his chief, and the chief requests one of our inspectors, myself or one of my brother inspectors, to go down, either by himself or jointly with the medical officer, and make their report, sometimes jointly, sometimes separately.

674. Do they ever clash?—Not that I am aware of.

675. Do you think that there are cases in which one or the other would be superfluous?—Such cases might arise, but I do not think they have arisen yet.

676. Would you propose to ensure a proper sanitary inspection by the present system through the Home Secretary or through the Privy Council, or by some united or new office, supposing there were new sanitary districts?—I should not like to venture to say what department of the state should take all sanitary questions, but from my river pollution inquiries and from my own studies of sanitary questions I think that we are quite ripe for some consolidation of inspection, but what department it should be under, or whether under a new department, I am not prepared to say; but if you will take such inspection as Poor Law Inspections, Local Government Act Inspections, Alkali Works Inspections, Fisheries Inspections, and the Mining Inspections, sometimes those duties might be made to run concurrently with each other, and if the department was one with one ruling head having power to utilize his force, I think that there might be great economy to the country by condensing and utilizing your inspecting power in some one general government office, but what office it should be I cannot say.

677. Do you think it possible, or if possible, desirable that one person should combine all the qualifications of a first-class sanitary inspector, supposing that engineering and medical questions were referred to him?—I think that you had better separate medical and engineering duties.

678. Are you aware that the general council of medical education is now considering the education of health officers or experts in matters affecting public health, or what is called state medicine?—I have no knowledge beyond the vague fact that your putting the question leads me to believe that something of the kind is taking place, but I have no other knowledge of it.

679. I believe that the Army Sanitary Commission has acted in conjunction with the Council of India in considering the best way of giving information to officers for the purposes of public health. Can you tell the Commission whether their experience would bear at all upon the civil population of this country?—No, it would be very difficult for me to describe the duties of the Sanitary Commissions now acting in India. They transmitted to England the plans for barrack arrangements, for station arrangements and questions affecting, for instance, water supply arrangements. The plans are devised by the local officers, whether civil or military in India, or at any of the other stations, and they are transmitted either to the War Office or to the Indian Board, and then they are transmitted from those bodies to this special Army Sanitary Commission which represents both those bodies. There are two members representing the India Board, and there are two or more representing the War Office, engineering and medical, and then there is Dr. Sutherland and myself, who may be said to represent the civil authority. The reports of the Commission are transmitted back to the several authorities.

680. Could you in detail describe the sanitary works?—There have been minutes of instructions very similar to that Blue Book before you, but upon a more extended scale I think issued to all the stations throughout the world. I dare say that on an applica-

tion from the secretary of this Commission a copy or copies of those instructions would be forwarded. They are with respect to hospital accommodation, barrack accommodation, prison accommodation, and other questions. Then there are printed returns sent in from the different stations in India from the sanitary inspectors, and they are transmitted through the different departments to the Indian Board or to the War Office, and they are sometimes brought before the Army Sanitary Committee.

681. (*Lieut.-Col. Ewart.*) If I understand your views rightly, you would propose to limit the power of conservancy boards to the general control of the rivers, and the preservation of the water from pollution, with preventive powers as to towns, but not supervising powers over the action of the local authorities of such towns in respect to sewage and other like works?—I would do all that you embody in the first part of your question, but I would not limit them to preventive power; they should have power to say to a town, or to any one authority that is made the local board, "You shall not put solids into this river, "you shall not put sewage in as sewage;" and to manufacturers, "You shall not put solids of any kind "in; you shall not put your soap waste and your dye "refuse in just as it comes from your works and from "your vats."

682. Has it come within your observation, that a great deal of bad or useless work has been done by local authorities, from want of sufficient knowledge or proper means of direction or inspection, and that towns have been involved in further debt to remedy the defects arising from such causes?—No, I cannot put my finger upon any such special case. If you could name to me any special case I might perhaps remember something of it. Of course the estimates are overrun in several localities, but as the question is put to me, I do not know any special case that I can bring my mind to bear upon at present.

683. If measures which are proposed by towns are rejected by the central authority, are they left to propose an alternative, or are they given advice or assistance?—They are left to propose an alternative, and they have no advice given excepting they ask for it.

684. If you had a county or other intermediate board between the Secretary of State and the local boards, would you not have a county inspector for works generally, including those for sanitary purposes?—I hardly understand the scope of the question.

685. Would you not have an inspector under that board?—I do not understand whether the county board is to be in the character of a conservancy board or of the local government board.

686. A supervising board over the local board, if you had such a board, whether it be a board of guardians or a county board?—I think it would be very mischievous to establish any such board, or to give any such power to any supervising board of that kind.

687. You would not recommend any intermediate board between the Secretary of State and the local board?—No, not of that kind; not as I understand the question, if I understand it rightly.

688. Do you consider that permission given to borrow money implies any approval of the works to be done?—It implies an approval so far as this—the inspector who has looked over those plans and estimates must have formed an idea that they are not outrageously bad, because if they were he would dismiss the application, but when he has given his sanction or recommended sanction, then I do not conceive how his department is in any degree responsible for the ultimate character of those works. For instance, in the Lancashire public works no local authority could receive sanction to borrow money to carry out the works without my having sanctioned the plans and the estimate; but I expressly stipulated that under no conditions should I be responsible for the utility or character of those works after they were executed. If I found, as the works were proceeding, that they were not being executed with that care and with that intelligence that was necessary to their due usefulness, I could withhold my sanction to the next application for money, and there my authority ceased, and once or twice I did so withhold my sanction, but even then I did not consider myself responsible. And what would follow if I did? Take the case of waterworks. I believe waterworks have been executed in Lancashire under the Public Works Act sufficient to supply nearly a population of a million. I sanctioned the estimates and approved the plans, and then they pass into execution, but I could not be responsible unless I could see from week to week, and month to month, how those works were being executed, and also in case of any unforeseen contingency arising, such as the opening out of a quicksand, or as a slip on the side of the cutting, or the material of which a bank is to be made if it turned out very different to what I anticipated. Now all those things not coming under my own inspection I cannot hold myself responsible, and that is why I would wish to divest any Government authority of executive power, because to be responsible for works of that class you must follow them week by week, and month by month, and follow them with that power of interference that brings responsibility, and you must have power to govern and control the person that is executing the works. That would lead to inextricable confusion, and therefore I repudiate any executive power on behalf of the State.

689. But do you not think that if works are executed upon funds which are borrowed by mortgaging the rates of a place, there should be some means of ascertaining that that money has been properly expended?—Only as far as I state. Supposing we take Oldham. That town has not borrowed money for the supposed purpose, but we will suppose that Oldham had borrowed 20,000*l.* to establish waterworks, and that it makes its reservoir; the security of the entire property of Oldham is given to the Government for the loan of that money. My responsibility ceased as I say when I reported on the plans and recommended or sanctioned the loan, and if that reservoir bursts, it does not diminish the security which the Government holds over the property, the ratepayers are liable to repay the principal and the interest just as if the reservoir endured in place of bursting, I am not responsible. The local surveyor, or the local authority which devised and executed the works, and which borrowed the money, is just as responsible to the Government for the repayment as if they had borrowed it on a common mortgage.

690. You have said that supposing the Secretary of State sent his own engineer to carry out the works, the cost might be trebled or quadrupled, and you apprehend that there may be expenses from 25 to 30 per cent.; can you specify any works so undertaken by Government under which such large expenses have occurred?—I think that it is a fact that the Caledonian Canal very largely exceeded its estimate, and has been so useless as a public work that it does not pay now at this moment for the working and contingent expenses to maintain it. Then take a work which is not very far from the place where we are sitting, the Victoria Street Sewer. That was devised and estimated for by the Metropolitan Board of Works of that day, one of the ablest engineers in England being the engineer, the late Mr. Frank Foster. I believe his estimate for it was 12,000*l.* I think it was let for something between 10,000*l.* and 11,000*l.* That sewer although more or less in ruins, has cost from first to last near 150,000*l.* Just imagine it to have been done compulsorily under an order from the Secretary of State, and by an engineer appointed by him; his engineer would have been liable to all those contingencies, and the Secretary of State would have been liable to all the odium arising from such a failure; the state would have been responsible for all those costs and charges. Some of the buildings at Whitehall have been pulled

down to the foundation and had to be rebuilt, and as I have been informed the sewer is in partial ruins.

691. But that work was done, was it not, by the local authority, and not by the Government engineer?—If it had been done by the best Government engineer that ever existed I am afraid it might have been just as bad; it was done by the Metropolitan Board of Works engineer and their contractor. Nature and accidents will defeat you. In my own experience I have laid out a system of sewers, all goes on swimmingly for a time, but in a street, as narrow as this room, and with valuable warehouse property rising up three or four stories high on both sides the sewer excavation 25 feet deep, all at once the men drop into a vein of quicksand, and if I persist in going through it it is at the peril of pulling down or bringing into ruins the property on both sides, and where you have used the greatest care, and the greatest precaution, cracks either take place or are imputed to the sewers, and actions are set up by the owners against the local board, and if you can imagine the Secretary of State sending an engineer into a town to sewer an unwilling community, you would have actions, complaints, and litigation, there would be no end to it.

692. You spoke of some large excesses upon works done by the Board of Works in Ireland, do you allude to those of an exceptional character which were commenced in 1846 at a time of pressure, or do you allude to more recent works?—I am not prepared to give you chapter and verse. although I have many of the reports in my office, but I alluded in the first instance to the great loss upon the Famine Works as they are called, and I may state to the Commission that it hae come to my knowledge that when the Cabinet sanctioned the public works in Lancashire they believed that there would be similar losses there, The late Lord Palmerston was satisfied that a great deal of useless work would necessarily be done, and that a great portion of the loan advanced to Lancashire would never come back to the Exchequer. As I had the honour of devising and of carrying through the works I am sure my friend, Mr. Lambert, will allow me to speak of him in these terms, as to himself is due the legal knowledge that framed that Act, and the care of Mr. Villers from beginning to end was to divest the Act entirely of centralizing authority and executive power and to leave the responsibility with the local authorities taking full security for the money advanced, and the result has been that there is not one farthing of loss. There is in Ireland a permanent board of works, and the other losses which I have alluded to were losses of this kind—arterial drainage has to be devised. This board of works devises and frames the estimates, executes the works, and the estimates are overrun, and the landowners who consented to a definite mortgage point blank refuse to be responsible for the excesses, and they find means to evade the payment. Those are instances of loss of public money to which I allude.

693. Are you aware that those works were undertaken at a time when it was not possible to prepare surveys or reliable estimates, because time did not admit of it; I allude to the works in Ireland under the Board of Works?—I question whether the same plea could not have been made with regard to Lancashire. I was sent down there at a short notice. I am sure I am speaking to gentlemen who are quite competent to correct me when I say that Parliament was bewildered as to what it was to do; there was to be emigration or there was to be a grant of public money to set those people to work; I was authorized to ask for any engineering or other assistance that I required, but by simply taking the existing machinery, by taking the local authority and explaining to the local boards the proposed operations, and expressing my wishes to render assistance I found the local authorities ready to devise works, and at once to proceed with them. Whether there existed such means in Ireland I cannot say, very probably there was not so complete a local governing authority in Ireland as in England, but I do not know as to that.

694. You do not allude, I presume, to other works carried on by the Board of Works in Ireland, except those carried on in that exceptional way?—Yes, I do. I allude to those works which are being carried on now by the now existing Board of Works in Ireland; there have been great losses upon those works. There is a permanent board of works in Ireland.

695. Can you specify any works?—No, I cannot at this moment, but I have the reports, and I could give the Commission the information if it were necessary.

696. (*Mr. Hibbert.*) With respect to the working of the Public Works Act in Lancashire, will you state to the Commission how, in the case of a parish, the initiation of the works commenced; did it come from the parish itself, or from the board of guardians?—From the board of guardians. When I was sent down into Lancashire I was associated with Mr. Farnal on behalf of the Poor Law Board, and we from day to day for the first three months attended by appointment upon all the local authorities and talked these matters over with them. In the meantime the Act was being amended; and we explained the provisions of the Act, and in all cases they (the local authorities) took the initiative. If works were to be done they themselves devised the works, they asked for a loan, but they carried the works out.

697. How were the guardians supposed to know the wants of a particular parish. Was the attention of the guardians called to the wants of a particular parish, as to the drainage or any other work upon which the money was wanted to be expended?—I suppose the guardians themselves being resident in the district, and coming from several districts, would meet in the board-room and would say "Such and such a work can "be improved, and such and such a work can be done," and discuss it amongst themselves.

698. Then it was not done at the vestries? Did the vestries meet and call upon the guardians to carry out certain works?—I think not, not necessarily. I think that the guardians took the initiative.

699. In carrying out those public works in Lancashire, is it not a fact that the Government inspection of those works during the whole time has been carried on without any expense at all to the local authorities?—None whatever; there was no inspection other than by myself and one assistant that I had resident in Manchester during the time, one office clerk, and Mr. R. A. Arnold. When local authorities made application for a further instalment, the district was visited, the works in progress were inspected, the accounts were audited, and a short report was made, which was submitted to the Poor Law Board, and if it was satisfactory the further instalment asked for was granted; but there was no inspection beyond that, excepting that if a difficulty arose, and a letter was sent to me or to Mr. Arnold, one or other of us went down to the district and examined the difficulty, whether sewerage or waterworks. I there and then advised the local engineer or the local authorities upon the spot, such inspections costing them nothing.

700. Were the plans of the works proposed to be carried out laid before some public board in London?—They were transmitted through the Poor Law Board to me.

701. Is there any difference between the mode which was adopted in carrying out the public works in Lancashire and the other works which are carried out under the Local Government Acts?—No, it was exactly analogous; and it was my experience under the Public Health Act and under the Local Government Act that enabled me to give that ready attention to the sanitary works that were proposed in Lancashire.

702. You stated that there is a strong feeling against centralization with respect to the Local Government Act; is not that feeling much less strong now than it was before the Public Works Act was brought into operation in Lancashire?—I believe it is. Throughout the length and breadth of Lancashire the feeling was

so strong, that for the first week or two I almost despaired. I attended with Mr. Farnell at Stockport, and there, to use a very familiar phrase, we had the cold shoulder. We attended at Oldham, and had a wag of the head there, and were told that the town council would do no such thing as undertake works. We were in other places met with remonstrances, and asked whether we were not ashamed of ourselves to ask them to do works which would burden the rates in a time of distress, and it was only by conciliatory conversations and persuasions that we got the local authorities started, and then principally by referring them to places that had been some time under the operation of the Local Government Act, as Preston, Wigan, and after the favourable replies from these and some other places we induced them to proceed.

703. Their objections arose, did they not, more from prejudice than from anything else?—Prejudice, and if I may use so strong a term, ignorance; they did not know what they were objecting to. They had been told in fact of this centralization that if they once adopted this Act the Government would be what I am pleading with you not to let it be, namely, that it would become a devising and executive power overriding local authority.

704. From the mode in which the various works have been carried out where the guardians were the authority, you would probably say that the guardians might be made the authority for carrying out in rural districts sewage and other sanitary works?—Yes, I do. Parishes are as general as the area of the country and the board of guardians is an elected body, and there are magistrates at times members, in districts purely rural I think that you could give guardians power to borrow money upon properly devised works, and carry those works out, as the guardians did in Lancashire.

705. I understand you to say that you object to the compulsory powers possessed by the Secretary of State under the Sanitary Act?—Only so far as compelling him to send an engineer to devise and execute the works. I stop there.

706. You do not object to his having an over-riding power, but you object to his being made the executive power to carry out the works?—That is all, my objection does not go beyond that.

707. Supposing the law were altered and the Secretary of State were enabled to inquire and, if necessary, to make an order that certain works shall be carried out, would you say that you would put the execution of those works under the guardians of the district?—Yes, and if you could frame a clause giving the Secretary of State power to fine the district if there is an epidemic and they will not carry out works, or if you can show that the water of the district is so poisonous as to produce fever, then devise some measure by which you can compel local authorities into action, anything short of making the Secretary of State the executive; I do not object to all forms of compulsory power, as I think that it might be in some cases wisely exercised.

708. Have you given your attention to the mode in which the law now stands with respect to the authorities in country districts, that is to say, in districts which are not under the Local Government Acts?—If the honourable member means the authorities set up under the new Sanitary Acts—the Sanitary and Sewage Utilization Acts—I must answer, No; because those Acts were passed during the time that my attention was abstracted by Lancashire public works and River Pollution Commission work, and I have not had occasion to take them up. The other inspectors will tell you much better than I can as to the authorities and as to the working under those Acts.

709. Is there not an objection to making a large body like the vestry the authority to execute any sanitary work in a parish?—No, I think it is very much better to set up an elective body which shall be defined, which shall be returnable for re-election upon the ratepayers, as under the Local Government Act, with provision that the elective power shall not go into abeyance. Then you have representation and taxation going simultaneously together.

710. Do you think it would be possible to make a parish government body in every parish just as you do now in parishes or places which adopt the Local Government Act?—Yes, I think you might. As I have stated a parish now may adopt the Local Government Act over the entire parish, if there is no local authority in force in the district. It becomes a question then whether it is always advisable to allow a parish so to monopolise the area in which there will be say one or two centres of population that might want to take separate action, and to do their own works in it, because the question is as to whether you should permit the parish to exercise authority over that entire area or whether you should permit the smaller sections to establish a new area.

711. I am speaking of small parishes—parishes with only 300 or 400 of population; of course those parishes do not require all the powers which are given by the Local Government Act. Could not you have some legislation which should embody certain of the powers of the Local Government Act, and make them compulsory upon every parish in the kingdom, that is to say, every parish which is not under the Local Government Act?—There again the word compulsory I do not quite comprehend. As to a small parish of 300 or 400 persons, I think I may say that if you would enable them legally to take the executive powers in the Local Government Act, and use them as a local board would use them, it might be a great advantage.

712. Are there not many powers in the Local Government Act which it would be unnecessary to give to a small parish, and yet there are powers in the Local Government Act which it is very desirable they should have and which should be put in operation in such parishes?—I am not lawyer enough to know whether it necessarily follows that if you let them adopt the Local Government Act all the powers of that Act are necessarily to be used. I think it lies with them to use such powers as they find requisite for their own district, and it might be an advantage to enable them to adopt the Local Government Act and use the powers fitting for their special purpose.

713. Could not an Act of Parliament be drawn which should embody certain powers of the Local Government Act, and be made compulsory upon every parish?—I am not sure that some of the Sanitary Acts do not exactly do that, but as I said my brother inspectors will better explain those powers to you than I can do.

714. I suppose you know that the Sewerage Acts give power to the vestries to carry out certain sewerage works?—Yes.

715. Are you aware that, although they have power to carry out sewers, they have no powers over the roads, those powers being vested in the surveyors of highways?—I can quite conceive that, but as I say again I am not up in the Sanitary Acts.

716 Do you not think it would be better to consolidate those powers and give them to a board to be elected in each township or parish, and that that would be much more likely to lead to sanitary works being carried out, than leaving the power as it is under the present law?—I do, because any parish or other local authority that has power to make sewers should have jurisdiction over the roads within its own area; the one follows the other—the maintenance of the roads and the construction of the sewer and drains should go together.

717. I understood you to say that in your report on the pollution of rivers you recommended that in order to prevent the pollution of rivers, the sewage for instance should not be turned into the rivers, and no sewage matter should be turned in from a manufacturing establishment, what would you propose to do to get rid of the sewerage matters and the solid matters?—My ideas with regard to river pollutions go to this—that you should, in the first instance, prohibit the casting in of solids from any source either from towns or from manufactories, and that you should prohibit the

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passing in of any unclarified refuse, dye waters, soap waters, or chemical ingredients of any kind which are notoriously liable to render the water so impure as to spoil it for other manufacturing purposes. Then carrying the prohibition that far I would say nothing further about it, but leave the remedy in the hands of the persons so tied up. For instance, I would not say absolutely to every town in Lancashire or every town in Yorkshire you shall irrigate, but I would say positively to all, you shall not send sewage into the river in its present condition; you shall take out all the solids, you shall clarify the water by the best chemical means, by the use of perchloride of iron or any other chemical agents that you choose to use, and you shall bring it to a certain standard of clarification, before it goes in—leaving them ultimately to adopt the simpler and the cheaper and the better method of land irrigation.

718. Then you do not propose, as I understand you, to carry the sewage water and other impurities away to some distant place?—No; that would entirely depend upon local conditions. Both in Lancashire and in Yorkshire steam-engine boilers use sewage tainted water, and if all such water were diverted many large works must stop. Dirty water is now necessary. This dirty water must not therefore be abstracted, but must be clarified.

719. Would not that be doing a very serious detriment to the manufacturers of the district?—I speak after considerable inquiry and after a considerable amount of thought upon the subject, and I have not yet seen a manufactory as to which you could not make the requirement reasonable. For instance, take the manufacturers of Yorkshire which pollute rivers to a far larger extent than the manufacturers of Lancashire do; the woollen and worsted trades are far dirtier trades than the cotton trade. There is one form of pollution very injurious to the streams, and that is turning in the soap waste. Wool cannot be manufactured excepting by the aid of a very large quantity of soap and oil, and the waste water is about the most offensive thing that you can turn into a river. At this moment there is something like 100,000*l.* returned back to the manufacturers who choose to adopt the process of recovering the grease from this soap waste, but there is at least double that amount that is lost and turned into the rivers, because the other manufacturers do not choose to carry the process as far as it can be carried, and many do not choose to adopt the process at all. There really can be no harm in enforcing upon every manufacturer the clarification of his water, and the recovery of waste material of that kind. Then in tin-plate making there is one of the most injurious compounds passed into the rivers from the pickling or washing of the tin plates, in which sulphureous acid is used, combined with other things. You may carry on tin-plate making from beginning to end profitably and beneficially and never send one single gallon of that matter into any stream or river, because if you put it where it can crystallize, a sort of green copperas, as I think they term it, is formed; at all events, there is a crystal formed which, I believe, is valuable for manufacturing purposes. That may go on continuously, and I would advocate prohibitory powers to stop people from poisoning rivers by turning in those ingredients. Then, with regard to the making of gas, rivers are polluted occasionally now by gas refuse, and formerly they were pollutted most abominably by it; but we know that you can make gas in perpetuity and never pass one gallon of fluid refuse into a stream, or pollute it with a single pound of solid.

720. (*Lord Robert Montagu.*) Is not turning gas refuse into rivers prohibited by the Gas Companies Act of 1851?—Yes; but many of them commit breaches of the Act, because there is no superintending authority. Then with regard to the alkali works, any person who will go into the districts where alkali is made upon a large scale, as St. Helen's or Newcastle-upon-Tyne, or any district where there are large alkali works, will see enormous mounds of refuse poured out in which there are ingredients left from the manufacture of alkali. Every shower of rain that comes upon it dilutes it and dissolves it, and washes it down, and if it goes into any stream it makes that stream in such a condition that it burns up all classes of vegetation and in the case of the canal near St. Helen's it attacks all the limestone upon the canal and destroys it, and it destroys or burns the iron that it comes in contact with, and if any unfortunate person fell into the water and went once overhead, he would be taken out a dead body. That trade I am informed by chemists can be carried on, and the material that is now left to corrupt the air and to pollute the soil and the water may be reconverted and the fouling ingredients may be taken out of it and it may be rendered innocuous and even be a paying operation to the manufacturer, but the margin of profit is so small that persons will not be troubled with looking after it, unless compelled by a law which is general in its application and enforcement in the trade.

721. (*Mr. Hibbert.*) Then we may state broadly that irrespective of the system of clarifying the sewage or any other matter, you think that the law may prohibit pollution?—I do. With regard to the obstruction of streams at this moment in mining districts, without let or hindrance coal mines, iron mines, and quarries exist on the banks of streams and a tip head is made into the nearest valley that may have a stream in it. In South Wales, up in the centre of the iron region, I saw the scoriæ coming out from huge furnaces and the water of their streams was not metaphorically boiling, but literally and absolutely boiling, on the margin of the stream there were great red hot slags rolling down into it. Then, on some of the most beautiful Lancashire streams there are very large iron works—they do not tip the scoriæ absolutely and actually into the stream, but they ingeniously run a tip parallel to it and it slopes down to the edge of the stream, and then the very first flood that comes rises 10 or 15 feet up the bank, and takes thousands of tons away and brings the tip down and so they go on, and that refuse is deposited in the lower reaches of the stream to the destruction of the stream, and to the great injury of the riparian owners whose lands are flooded by the raising of the bed of the stream.

722. (*Earl of Ducie.*) Do you contemplate the future use of earth-closets on the earth system either according to the present mode that is employed or under some improvement?—I think that there may be an adaptation, but I would take away the word closet and I would take away the word dry, because neither of them is applicable to the system, and call it an earth latrine, for you cannot use the word dry when the urine has to go into it, and you cannot use the word closet when the apparatus breaks down in the closet machinery, but you may in country districts have latrines in which earth is scattered ever the excreta and removed at short intervals which would be an enormous improvement over the putrid cesspit which ferments and gives out noxious gases.

723. You do not think that that is at all likely to supplant what we may call the liquid system?—Not when you necessarily have sewers and drains.

The witness withdrew.

Joseph Clegg, Esq., M.R.C.S.

(4.) Joseph Clegg, Esq., M.R.C.S., examined.

724. (*Chairman.*) You are one of the district medical officers at Epping, are you not?—I am medical officer of that union and also of several parishes in the neighbourhood.

725. What is the size of the union to which you are medical officer?—There are 17 parishes in the union.

726. What is the local authority at Epping?—At present we are under the Sanitary Act of 1866.

727. When you talk of we do you mean the whole union of 17 parishes?—No; I mean the town of Epping.

728. Is that one of the 17 parishes?—That is one of the 17 parishes.

729. Are the others all rural?—Yes.

730. What is the population of Epping?—The parish of Epping is about 2,100, that is to say, the town of Epping itself; but we have had a special drainage district recently formed by the Home Secretary containing portions of the parish of Epping, Theydon-Garnon, and Theydon-Bois, the population of the district being about 3,000.

731. What is the local authority for other purposes of local government?—Until the passing of the Sanitary Acts of 1866 and 1868, there was a nuisance committee which sat at the union house, and they had, I believe, two inspectors for the removal of nuisances appointed for the whole union, but after the passing of the Act the clerk to the nuisance committee advised them that they had no further powers, consequently we have no authority for the removal of nuisances in the whole union at present.

732. Has Epping any special Act for any Local Government purposes?—We have no special Act; a special drainage district was gazetted on the 30th of January 1868.

733. Is the board of guardians the local authority for all sanitary purposes?—No, they have no power whatever over the district.

734. What is the local authority for such purposes?—We have none whatever.

735. You must have somebody responsible by law?—No, the Home Secretary is now about to commence the works, the engineer has surveyed the district, and is making his plans in order that he may commence the works.

736. Have you yourself as a resident medical gentleman finding the bad state of the district called for inquiry?—The first step I adopted was in February 1867. I endeavoured to get the magistrates to act and see what could be done. I addressed several communications to the board of guardians, but they told me that really the Nuisance Removal Act gave them so little power that they could do nothing. In consequence of the difficulty which I had in procuring anything to be done, I decided upon getting a parish meeting called for the purpose of putting the Sanitary Act of 1866 in force, and on the 25th of April 1867 a meeting was called for that purpose, and at that meeting it was decided to adjourn to the 28th of May in order to form a special district, for that purpose as far as Epping was concerned, and that the parishioners of Theydon-Garnon should be requested to do the same in order to form a joint district as neither parish could be drained without the assistance of the other. In the meantime the meeting in Theydon-Garnon was held when they determined not to adopt the Sanitary Acts, but simply to enforce the Nuisance Removal Act. In consequence of this determination I addressed a letter to Mr. Simon, of the Privy Council, desiring him to send someone down to inspect the neighbourhood, as it was then in a very unhealthy and dangerous state, there being a great many cases of fever. The parishioners of Epping held their meeting on the 28th of May at the Cock inn, when they decided to appoint a committee to carry out section 10 only of the Sanitary Act of 1866.

737. Is section 10 of the Act of 1866 as theto drainage of houses?—Yes, it is. They appointed a committee to carry out that section, limiting the action of the committee to making certain alterations of a most trivial character. In consequence of the evident determination of the parishioners to do nothing effectual, I addressed a letter dated June 7th to the Home Secretary, desiring him to put in force the 49th section of the Sanitary Act, 1866.

738. The 49th section of the Act of 1866 enables the Secretary of State in case of default by the local authority to have works done by his own authority?—Yes.

739. On the 25th of June I received a notification that he had appointed Mr. Arnold Taylor to visit Epping for the purpose of inquiry and to report on the sanitary state of that district. The inquiry was held on the 11th and 18th of July, and on September the 19th Mr. Arnold Taylor's report was sent to the Home Secretary, who forwarded to me a copy of it, which I had printed for circulation in the neighbourhood, a copy of which I will hand in to the Commissioners (*handing in the same*). It also contains the analyses of the well-waters of Epping, by Professor Way. Mr. Taylor in his report states that, "If ever "the town of Epping is to come under any efficient "system of local government and to have the proper "means applied for its sanitary improvement, there "must be first formed a district of the town of Epping "made up of portions of the two parishes of Epping "and Theydon-Garnon." Consequently a memorial was prepared and signed by one-fourth of the ratepayers within the proposed district, comprising parts of the three parishes of Epping, Theydon-Garnon, and Theydon-Bois. The petition was presented to the Home Secretary on the 17th of October, and on the 29th of October he gave notice that Mr. Arnold Taylor would hold an inquiry on the 12th of November at Epping under the Sewage Utilization Act, 1867, section 8.

740. Section 8 of the Act of 1867 gives power, does it not, to an undefined inhabited place to apply to be constituted a special drainage district?—Yes, for the settlement of the boundaries of a special drainage district, as set forth and described in the memorial. The result of the inquiry was that a special drainage district was formed and gazetted on the 13th of January 1868. On the 30th of March I addressed a letter to the Home Secretary with reference to the question as to the mode of calling a meeting for election of the committee of the Epping town special drainage district, and the appointment of a summoning officer. The reply of the Home Secretary was that he had no power under the Acts to appoint a summoning officer, but he recommended that the churchwardens of the three parishes included should sign a joint notice of a meeting for the election of a committee and the necessary officers. As considerable doubt existed in the minds of many persons as to the legality of that manner of proceeding, I took counsel's opinion upon the subject, who advised that the notice should be signed by the incumbents of each parish in the district as well as by the churchwardens, and by at least as many laymen as would raise the number of signatures to 20. A notice was given, bearing date the 30th of April 1868, signed as above directed, of a meeting to be held on the 7th of May, for the purpose of electing a committee and officers, &c., to carry out the Sanitary Act of 1866. The meeting was held on May the 7th, and the committee was elected, comprising 21 persons, with full powers to carry out the Sanitary Acts, the ratepayers having delegated to them the power to elect an officer. After this committee had met weekly for three months, I made a formal application to see their resolutions, but was refused; I considered that I had a right to see them as a ratepayer in the district, and I made a formal application to do so. I ascertained from members of the committee that they had determined to do little or nothing, as they had negatived a motion to appoint an engineer for the purpose of carrying out the necessary works for drainage and water supply, but subsequently at another meeting they resolved to call in Mr. Stevenson, a civil engineer, to give a report as to how water could be obtained for some smaller portions only of the district, leaving the town of Epping entirely out of the question both as regards drainage and water supply. This state of things being most unsatisfactory, I addressed a letter to the Home Secretary, dated the 1st of August 1868, begging him at once to put in force the 49th section of the Sanitary Act, 1866. After many letters passing between the committee and the Home Secretary, the committee on the 5th of November called a meeting of the ratepayers to explain their position, which resulted in their tendering their

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resignation, and its being accepted, so that since the 5th of November we have had no committee, nor any inspector of nuisances, nor any sanitary officer at all in the whole district.

741. So that in fact the whole story amounts to this, that the authority having been constituted, did not act, and as soon as the Secretary of State attempted under the 49th section of the Act of 1866 to compel them to act, they resigned as a body and eluded him?—Yes. In consequence of the decision of that meeting, I addressed the Home Secretary again on November the 6th, begging him to appoint some person to carry out the necessary sanitary works in this district. On the 8th of December notices were posted calling a meeting of the ratepayers of the district for the 17th of December, for the purpose of receiving and considering an order from the Home Secretary, bearing date November 21st, on the sewer authority to carry out the works requisite for the proper water supply &c., of the said district within one month, and for the purpose of taking such steps as may be deemed expedient. At this meeting a proposition that a clerk to the sewer authority be now appointed, was rejected by 43 against 12 votes, on which a poll was demanded, and when the poll was taken, the majority was very much larger. Afterwards a motion was carried by 54 against 16 that the meeting be adjourned to the 5th day of May next, that is the day after to-morrow. On the 21st of December I addressed another communication to the Home Secretary praying him to appoint a person to carry out the necessary works, and an officer to levy and collect rates, &c., in the district. After waiting six weeks for a reply I addressed another letter to the Home Secretary, dated January the 30th, which resulted in his appointing Jabez Church, Esq., civil engineer, to carry out the works of drainage and water supply in the Epping district, which appointment bears date the 13th of February 1869, and Mr. Church is now busily engaged in making a survey and preparing plans and specifications, &c. for the said works.

742. Then, in fact, the works will be carried out?—Yes, they will be carried out, but at present there is no officer of any kind in the district.

743. Will you state generally, as a person of medical authority, what is the sanitary condition of Epping?—It is very bad indeed. The mortality is larger than in any district in the whole of Essex; in 1867 it amounted to 26·5 per 1,000.

744. Was that without any epidemic to account for it?—We had a great deal of typhoid fever. I have got the correspondence which has passed between the Secretary of State and ourselves, in which the state of the neighbourhood is fully set forth.

745. Generally speaking, you think that that arises from the want of drainage and the want of a good water supply?—It does.

746. Will the works which you are now about to effect cure that?—I have no doubt whatever that they will.

747. How will the Secretary of State recover the cost of the works?—He has the power of appointing a person to receive monies and to collect.

748. So that in fact the law is effective after a long delay, and after great obstruction on the part of the locality?—It is done at last, but it is a great trouble, and it has all had to fall upon my own shoulders, and I do not think that that is a state of things which ought to exist.

749. As you have gone through so long a battle, would you suggest that the law might in the first place have the effect of obliging the action of the locality?—I consider that the matter ought to be made compulsory; the Act ought to be put in force at once, but it is not so now.

750. What sort of legal power would you propose to make it compulsory?—I would levy a penalty upon the district; that is the only way, they care for nothing but money.

751. Do you mean that you would make the adoption of the Local Government Act compulsory?—Yes, I would make it compulsory; if the Act is right they ought to be compelled to put it in force.

752. To what extent do you think the adoption of the Act should be made compulsory?—I should put it in force in every parish in the kingdom.

753. For what purposes? — For the purpose of drainage, and for water supply also.

754. You are not contemplating any other functions of local government, such as with reference to the overcrowding of dwellings, or any other matter of that sort?—That is a very important matter. I think that the present organization existing in unions would be the best to adopt, for a sanitary committee to have the power to act where there are no local authorities; that is to say, where the Sanitary Act is not carried out in any special drainage district, or under any Local Government Act. The whole of the parishes ought in such a case to be under the control of the union.

755. Do you think the board of guardians would more effectually carry out such an Act than the vestries?—Yes, a special committee formed by the board of guardians. The vestries would not act. There is a case in point now in the adjoining parish. You will perceive that a portion of Theydon-Bois is included in the Epping district. There was an attempt to get rid of those nuisances in Theydon-Bois, and they have elected a committee, and I believe the committee have virtually determined to do nothing, and it will end there.

756. Would you propose that a work which only applies to one parish should be placed under the guardians of the union?—I think it would be better.

757. Generally speaking you think that the vestries will not work?—Not at all.

758. What sort of a surveyor or inspector do you think the board of guardians ought to have for the purpose of sanitary superintendence; should he be an engineer or a medical man?—As a rule medical inspection perhaps is the best, but surveyors might be found who are not medical men quite competent to deal with nuisances. The only fault is that a nuisance is not sufficiently defined in the Act.

759. You have an inspector of nuisances, have you not, at Epping?—No, we have not. They will not appoint one.

760. Have you any such an officer for suggestions to make as to special drainage districts?—The difficulty of electing officers to serve in such a district is very much felt in our own case.

761. What does that difficulty arise from?—Unwillingness to appoint anyone. They think that by appointing no officer nothing will be done.

762. Do you think that they could appoint officers who would act independently without fear of their employer?—Yes, certainly. There would be no difficulty if they were disposed to appoint one.

763. Who should those officers be appointed by—the vestry or the board of guardians?—By the vestries where the Sanitary Act is in force in a special district, but where it is in force in different parishes in a union, by the board of guardians.

764. Supposing it were for two or three out of your 17 parishes, would you have the appointment made by the parishes or by the guardians?—By the guardians. In our instance there is a portion of Epping which is out of the special drainage district, and nothing is done there; there is no one to do anything in it.

765. By your own activity you got an inspector from the Local Government Act Office in London, but do you think that there ought to be some more regular inspection without application?—Certainly. I think that there ought to be inspectors taking similar districts to those of inspectors under the Poor Law Board. We all know that the poor law would never be carried out if there were no poor law inspectors, and there ought to be an inspector to take a similar district, and to report his own opinion as to its sanitary condition.

766. Do you think that this inspector should come from London?—Certainly he should, just the same as the poor law inspectors are appointed now throughout the country; let them be resident in certain districts in

England. I think that the poor law inspectors have two or three counties generally under their supervision.

767. Do you mean that they should make an annual report to the Local Government Office?—Yes, or more frequently if required.

768. Have you any suggestion to make as to the plans of works or buildings or dwelling houses being under inspection or approval?—I think that no buildings of any kind ought to be erected without the approval of some authority.

769. What circumstances have led you to form that opinion?—You very often find in the country that a man gets a very small piece of land, and he puts a house upon it, without any privy, or without any drainage, or any water supply, or any proper footpath to it, and some of the very worst characters in the neighbourhood will inhabit those houses, and thus the parish becomes saddled with very bad people; and then by-and-by typhoid fever or cholera, if there happens to be an epidemic of cholera near, breaks out, and the suffering is very great, and the people become permanent paupers.

770. Do you mean that every local authority should have a surveyor whose approval should be necessary to every plan of a building?—Yes, certainly. I had intended to have brought a plan with me on which I could have shown a number of houses that have none of the conveniences that I have mentioned, as many as 14 in a row, and some have had their privies put over a ditch where the soil accumulates in a most offensive manner.

771. Do you think that such a plan of inspection and approval could be carried out in country villages?—Yes, certainly; by appointing a surveyor for the whole union.

772. Do you think that it should be made imperative that every building should have good drainage and good water supply?—Yes, certainly.

773. How many inspectors of nuisances do you think would be necessary effectually to carry out the Nuisances Removal Acts in your union?—The best arrangement would be to appoint the police officers in the different districts; they are the most effective inspectors of nuisances as a rule in small districts.

774. Are you talking now of rural villages?—Yes.

775. Is it the county force which acts at Epping?—Yes.

776. Do you think they are persons who could be relied upon to prevent nuisances?—They could be relied upon more than any other persons, I think; but there is very great difficulty in getting a nuisance removed when it is brought before the magistrates. There is a case in point now in the parish of Epping. Before Mr. Amys resigned his function as clerk to the nuisance authority, and before the executive committee for the union was dissolved, a dispute arose as to who should empty a cesspool. The occupier said that he would not empty it as it was not his province. Then Mr. Amys served a summons upon the agent for the property. The agent denied his liability to do anything of the kind, and then I believe a summons was served upon the owner, and there has been a great deal of litigation going on in that case.

777. How would you propose to make it more clear as to who is the person who is to be made responsible for nuisances?—The law ought to be defined as to who is responsible for a certain kind of nuisance—for instance, if it is connected with the construction of the work the owner is clearly at fault—if it is for accumulation and the means at one's hand for removing the accumulation, it is evident that the occupier is at fault.

778. You think that the law should specify clearly what kind of nuisances owners or occupiers are liable for?—Yes, certainly.

779. Have you any suggestions with regard to making the special drainage district coincide with the registration districts?—I felt it desirable as we were about to carry out the works we should know something of the mortality that has preceded the carrying out of those works; and also for a number of quarters afterwards, it is very desirable that that should be known, and I called at the Registrar General's Office to know if that could be done, and I took a plan with me of the district, and stated that as one portion of this district belonged to another sub-district, not at Epping, which is five miles from the Registrar, it was desirable that we should have it put in the district, so that we could have then the whole of it under one Registrar, and have special registration for that district; but I was told that they had no power; that they felt the great inconvenience of it, but they could not alter it, that the district was originally formed by the guardians. The law does not allow them to alter any registration district. It is very important that greater power should be granted to alter those districts.

780. Have you any suggestion to make as to fever hospitals?—From seeing so many cases of fever brought into my own neighbourhood, and more especially small-pox, and seeing how it has spread, I thought it desirable that we should have a fever hospital of our own, to receive cases of small-pox, scarlatina, and measles, situated somewhere near the centre of the union, in order that all cases of fever or any of the diseases that I have mentioned, if removed from their own residence, should be taken there, the law being made compulsory that such patients should go to no other place but the place provided by the parochial authority if they were removed at all.

781. Do you mean a fever hospital for every union?—Yes; but I would not make it a pauper establishment.

782. You have a suggestion to make, have you not, as to the use of waste lands in certain neighbourhoods?—Yes. In the neighbourhood of Epping we have about 300 acres of waste land, which is now only a curse to the place as a refuge for the prostitutes and thieves in the neighbourhood. I suppose we have no less than 50 or 60 of these characters in that neighbourhood now, who could not possibly live there if it was inclosed. The whole of this land is undrained, and is a very great nuisance to the whole neighbourhood. If the land were enclosed we could make a park and a cemetery, both of which are very much wanted, and leave sufficient land to carry out our drainage works if it was disposed of.

783. What sort of power do you want to facilitate this?—At present Her Majesty has refused to grant any more crown grants for any portion of Epping Forest. I believe that if Her Majesty would give permission to inclose this the lady of the manor might be compensated by giving her a portion, and the copyholders would be compensated by having that work carried out free of expense.

784. (*Earl of Romney.*) I understand you to say that you believe that the board of guardians have no power to appoint inspectors?—They consider that they have not; they were so advised by their late clerk.

785. Did you ever know an instance of their having done so?—They had an inspector before the passing of the Act of 1868.

786. Do you believe that in consequence of that Act that power which they formerly had has been taken away?—That was the reason which they assigned.

787. Have you any belief to the contrary; do you think that they have been wrongly advised?—I think so; I think that they have the power.

788. (*Lord Robert Montagu.*) Do you consider it absolutely necessary that every sanitary law should be compulsory just as vaccination is by law compulsory?—Certainly.

789. And on the same ground?—Yes, on the same ground.

790. Do you think that competent inspectors should be appointed for sanitary matters, just as it is now obligatory under the Cattle Plague Acts to appoint inspectors of cattle?—I should take a larger area perhaps than the area of the cattle plague inspector.

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791. If it is necessary to appoint inspectors for cattle, and if the law makes it compulsory, is it not still more necessary and therefore should it not still more be compulsory that inspectors should be appointed for sanitary matters affecting human beings?—Yes, certainly.

792. Unless those two conditions are fulfilled, the sanitary laws will not be observed, you think?—They will not be effectually observed.

793. Why is it that the guardians refuse to carry out the sanitary laws; is it from ignorance or from what reason do you imagine?—I do not think that as a rule, the guardians refuse, except in certain localities, for instance, in small villages or in a small town like Epping. The guardians as a rule remove nuisances far better than the vestry.

794. Is it from ignorance, do you think, that the vestry refuse to carry them out?—I think it is a good deal through ignorance, but quite as much from the cost.

795. Do you think that persons who are elected directly by the ratepayers are not so apt to carry them out as persons who are elected by a double election, such as the Metropolitan Board, or a committee of the guardians or of the vestry?—The great misfortune is that there is so much petty jealousy in a small place—one person will not do a thing just because another proposes it, and that is generally the case in a place like Epping. In a large area like a union you have the whole board of guardians elected from different places and they have not those prejudices, and they are changed annually, at least many of them are.

796. Then it is chiefly from local prejudice you think?—I think so, a great deal of it.

797. (*Mr. Cave.*) You think that in the wider area public opinion prevails as contradistinguished from private local opinion?—It is so, I think.

798. Was not it in one of those parishes, Theydon, that the outbreak of cholera took place?—Yes, the parish I alluded to is Theydon-Bois.

799. It was introduced there from Southampton, was it not?—Yes.

800. In such a case as that the present law seems entirely useless in enforcing any rapid action?—You cannot put this Act in force quickly, unless the people are willing to do it. If they are quite willing, you have a very easy remedy.

801. When you propose to inflict a penalty on a district, will you state a little more distinctly what your opinion is upon that point?—If the surveyor or inspector finds after he has reported to the board that certain nuisances are required to be removed, that the authorities do not remove those nuisances, he would report to the board accordingly, and the board would report to the Government inspector of the whole district, and then, perhaps, he would make an application to them to do it at once, and if not, he would take steps to compel it to be done, just as the inspector of factories, if he finds that persons are evading the law, takes them before the magistrates and proves the facts, and a fine is inflicted at once, so I should inflict a fine upon a parish to be paid out of the rates of the parish.

802. Supposing the board did not report to the Government inspector?—The surveyor's report would be recorded in the books, and when the Government inspector came down he would see it, and the board would be under a penalty for not having done so.

803. Who would bring him down to inspect the boards?—He would take a circuit.

804. That is supposing the law were altered in the way you propose?—It is supposing that.

805. Not according to the present state of things?—No.

806. You would propose that the fine should be levied upon the district; who would have the power of levying that fine?—The inspector. I would give him the power to do so.

807. Have you considered to whom the fine should be paid?—I would let it go to the expenses of the inspector, and it should be paid to the Government.

808. You think that a better plan than the Home Secretary directing the execution of the works?—I think so; a local board would never hesitate were the Government to adopt the same course as has been adopted with regard to the River Lee Conservancy, by whom a certain notice is given that if the works are not completed within the time specified there is a penalty of 100*l.* and 50*l.* per day afterwards; under the River Lee Conservancy Act I believe that is so.

809. At present the works are going on at Epping, are they not, by order of the Secretary of State?—The survey is being made, and the plans are being prepared, but the works are not yet commenced.

810. (*Mr. Powell.*) The poor law union is composed of a group of parishes, and the board of guardians is the result of parochial election of parties representing the different parishes, who meet and form a board. I presume that your evidence would not at all oppose a proposition to form other groups of parishes for sanitary purposes, and for them to elect a representative body which might be called a sanitary board?—Not at all. We have got one group in Epping now of portions of parishes, arranged for convenience.

811. You think that such groups, taking parishes as the unit, but having regard to the sanitary wants of localities, might be found to furnish an efficient machinery?—I do not understand whether the question implies that where there are not those groups of parishes the board of guardians would act as the sanitary authority.

812. No, I am assuming the whole country cut up into groups of parishes for sanitary purposes?—I think it would be far better to use the same machinery that you have now.

813. You would retain the Union as it now is, and re-distribute the parishes into new groups for sanitary purposes?—Certainly, except where the population is likely to be 3,000 or 4,000, or perhaps more than that, where they would like to manage their own affairs themselves.

814. You think that people are so much accustomed to poor law unions that you would allow them to maintain the custom?—I think so.

815. In your remark in favour of enclosing Epping Forest, did you refer to the whole forest?—Only to the portion within the parish of Epping, and which is beyond the metropolitan police district entirely.

816. (*Mr. Richards.*) From your experience of boards of guardians is it your opinion that a sanitary board could be formed out of a board of guardians somewhat in the same manner as the present board appoints a board for valuation purposes?—The board of guardians at Epping had lately, at least until the Act passed in 1868, a nuisance removal committee elected out of the different members of the board that acted in a similar manner.

817. But do you think it would be possible to make it imperative upon boards of guardians to form a sanitary board?—Certainly.

818. Do you think that that body would be likely to be an efficient sanitary board, assuming that a certain number of *ex-officio* guardians were appointed upon it?—They would be more efficient than the committee, for instance, elected in Epping, in the drainage district.

819. Why do you think that that would be so?—Because in a small district like that, there is so much local petty jealousy that they will not carry out the things that are really best for the town; they would do it very readily if they knew that unless they did do so they would be under very heavy penalties.

820. (*Mr. Bircham.*) Would you think it convenient that the jurisdiction of the roads should be in the same body as the jurisdiction in respect of health?—It would be much more convenient than the present formation of highway districts without any regard to the unions at all.

821. And that the board you are alluding to should comprise the duties of a district board of roads and health and nuisances?—Yes.

822. (*Mr. Paget.*) I presume that you have knowledge enough of the sources of mortality in Epping to enable you to say that the great mortality that you speak of is due to causes which sanitary laws might control?—Yes, certainly.

823. There has been no special collection of old persons more than ordinary in Epping which should add largely to the amount of mortality?—There are a great number of old persons, but the great mortality is due chiefly to typhoid fevers and fevers of a low type. Of diphtheria we have had several cases, and in my practice I attended in two years about 170 cases of typhoid fever.

824. You spoke of the necessity of fever hospitals. You think that the condition of Epping is such that it would be impossible to prevent the spread of typhus fevers in good private houses?—I think there is great danger of its spreading. It might be prevented in good houses, but my object is to prevent any of those fevers by removal. For instance, a servant is taken with the smallpox or scarlatina, and she is sent home to her father or mother, whichever it may be; where perhaps there are seven or eight children in the house. There has been a case, for instance, of a girl with smallpox sent to North Weald, where several families had the smallpox, and from North Weald it spread to Duck Lane, a distance of about a mile, and from Duck Lane to Epping.

825. (*Dr. Acland.*) I understand you to wish the country to be divided into general districts for sanitary purposes, either unions or some other division I presume?—I think that the union is the most convenient, because there is already the machinery at work.

826. But not necessarily a union?—Not necessarily so; but I think it is the best because the machinery is there.

827. Would your principle be that of having local administration and Government inspection?—That is what I should advise; Government inspection certainly.

828. As is the case now with unions?—The Government inspector, I think, simply reports as to how the law is carried out with reference to the administration of the poor law; he has nothing to do with sanitary laws.

829. Should you say from your experience of the unions generally in your neighbourhood that the guardians are indisposed to carry out the sanitary regulations recommended by their officer?—I do not at all think that the guardians are indisposed to carry them out. It was not by the wish of the guardians that the nuisance committee was broken up. It was simply by the advice of their legal adviser, who told them that they had no power.

830. Then it was the fault of the law, and not the fault of the locality?—I do not think that it was the fault of the law. I believe they are trying to organize it again. Their legal adviser said they had no power to act under that Act of 1868, because he said that under that Act the whole power of electing an officer was taken away from the board.

831. (*Sir T. Watson.*) Do you think a constable of the county police would be sufficiently independent of the board of guardians or the inhabitants of the place generally, to be trustworthy to report nuisances?—I think he would. I have seen constables very efficient in many places in pointing out nuisances.

832. Would you recommend him rather than any other person?—Yes; he is more independent. There is one thing about the Nuisance Removal Act which I think ought to be altered. At present you require a notice to be signed by two householders before you can act. I think that ought to be done away with. The inspector ought to act upon his own account, and not only that, but any one person should be able to make a formal complaint before him, and he should go and inspect the nuisance, and if the nuisance exists he should cause it to be removed without bringing forward the name of the party who has made the complaint, because it is not desirable that the name should always be known. I know many instances where persons are living in a very friendly manner and wish to continue to live in that way. Perhaps there is a heap of blood and manure within 10 or 12 yards of a person's chamber window, and he knows how very wrong it is, but he says, "I dare not complain of my "neighbour. I cannot get it removed unless I get "two householders to sign it." The result is that it goes on in that way without any remedy, whereas simply signing a notice to an inspector, and the inspector being bound to secrecy and not to divulge any name, it would be remedied.

833. (*Lieut.-Col. Ewart.*) You would propose, if I understand you rightly, that the medical officer of a union should in fact be the sanitary inspector of the union, the police occupying the subordinate position of inspectors of nuisances?—I think it would be better to have a sanitary committee, as was suggested by one of the commissioners, composed of members of the board of guardians with a number of *ex-officio* guardians to form a sanitary committee, and let them appoint their own clerk, and let the inspector of nuisances report to them. They would then record everything; the Government inspector would see that record, and see whether they had carried out the Act in its entirety, and if not, he would be able to inflict a penalty on the district.

834. With regard to the superior inspector that you have spoken of for a county or a group of counties, would you propose that he should be solely an inspector for sanitary purposes?—Yes, certainly; he should inspect the union workhouses and see that the Acts were carried out in all the different unions and in every district in the union.

835. (*Mr. Hibbert.*) Have the poor rates been raised in your neighbourhood owing to the great mortality?—I do not know that they have been raised; I think they are much about the same, I cannot say what they are this year.

836. With respect to your proposal about making the guardians a nuisance removal committee, did you mean that you would have a committee of guardians, something similar to the assessment committee of a board of guardians?—Yes.

837. Would you allow the *ex-officio* guardians, representing each township or parish, to be on the committee?—It would be better that they should be constituted on the same plan as the union valuation committee.

838. You would prefer that to having a board elected purposely for sanitary matters?—I think so. It is not very material, but I think that would be the best course.

839. What was the reason why your district has refused to carry out the necessary works?—One great reason is the expense, and another reason is the petty jealousy of parties in the neighbourhood.

840. Do you think you would get over those difficulties by referring these matters to the board of of guardians?—I think we should in our district, if it was simply known that there would be a penalty of 100*l.* if the works were not carried out at a certain date and 50*l.* a day afterwards.

841. Would not it be as difficult for the board of guardians to carry out works in a district, as it is for the Secretary of State to carry them out?—Our place is becoming much larger, and ultimately the work may be all done, and it is desirable where you can have the local action of a number of inhabitants together to let them manage their own affairs as far as they can; but where I wish to see the board of guardians acting is in rural parishes, more particularly small parishes.

842. Do you think that the board of guardians would do without the overriding power of the Secretary of State?—I think that his inspectors would be quite sufficient.

843. (*Earl of Ducie.*) I presume there is nothing exceptional in the case of Epping to account for this apathy and obstruction on the part of the authorities?—I know no reason except the expense and the feeling of petty jealousy.

844. And to that we might attribute the delay

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which takes place in a great many other places?—I think that it is more marked this year with us.

845. (*Chairman.*) Do you think after those works have been carried out by this roundabout process that the locality will come to an agreement to constitute a local authority?—I think they will shortly, when they find that it will cost much more if the Government have to go on collecting the money for them, than if they collect it for themselves. That is the only way of bringing them to their senses.

846. Will the expenses of the works now going to be carried out be levied upon the rates of those three particular parishes which are there combined?—Not upon the parishes, but upon a district formed out of the parishes; it will be a special rate.

847. Are not the boundaries of that district conterminous with the boundaries of the parishes?—No.

848. (*Earl of Romney.*) What is your opinion with regard to the employment of relieving officers as inspectors?—I do not think they are so effective as the inspectors of police.

849. Would not they have great facilities for doing the work by having to go round and give outdoor relief?—Yes, they have great facilities for doing it, no doubt.

850. Those things will necessarily very often come under their observation?—Yes, frequently; but there is this to be said against it; there are many localities which the relieving officers do not visit at all, where nuisances may be existing; whereas in very poor neighbourhoods persons do not object to speak to the policeman, and say, "If you go into my back yard "and look over the wall you will see a nuisance "there; will you report it?"

851. But the police, unless they have some particular reason for it, do not go into houses and into the back premises of those houses; whereas the relieving officer's duty in certain cases is to do that?—That is only in the case of the very poorest, and it is often the case that nuisances are worse with the middle class than with the very poorest; for instance, butchers and those kind of trades.

852. If the relieving officer were appointed he would have the same facilities that the policeman would have with respect to the middle class, and increased facilities with respect to the poorest and probably the filthiest class?—Yes.

853. With regard to the very worst classes, where the greatest nuisances would exist, he would go with peculiar facilities because he would go there in the discharge of his duty as relieving officer?—Yes; but that would often take him away from his duties as relieving officer. It was tried in our union to make the relieving officer an inspector of nuisances, but I do not think that it worked so well as if they appointed the superintendent of police as an inspector, because he makes use of all his men.

The witness withdrew.

A. Taylor, Esq.

(5.) Arnold Taylor, Esq., examined.

854. (*Chairman.*) Are you one of the inspectors of the Local Government Act Office?—I am.

855. How long have you been so?—Since June 1865.

856. Have you prepared certain abstracts of inquiries, conducted by yourself in your present office, which you wish to put in as evidence?—I have; of inquiries under the Local Government Act since that date, and under the Sanitary and Sewage Acts since September 1866.

857. Do those abstracts give a general idea of the questions on which inquiries are held by the inspectors of your office?—They do, except inquiries relating to sanctions to loans, of which I have taken no notice in the abstracts.

(*The same were delivered in, and are as follows:*)

Abstract of Inquiries under the Local Government Act, from June 1865 to December 31st 1868.

——	1865. ½ year.	1866.	1867.	1868.
Settlement of boundaries of districts	6	7	4	3
Special circumstances—places under 3,000 population.	2	2	2	—
Division of districts into wards -	1	1	—	—
On appeals against adoption of Act	4	5	3	1
„ for separation from new districts.	1	2	1	—
„ against building bye-laws.	—	3	3	2
„ against auditors' surcharges.	—	—	—	2
„ against local board's rating.	—	1	1	—
„ for scrutiny of votes -	—	1	—	—
Petition for extension of rating district.	—	—	1	—
Sewage outfall beyond district -	—	—	1	—
Provisional Order Cases.				
Extension of borrowing powers -	1	2	2	2
Partial repeal or alteration of local Acts.	2	4	4	4
Separation from or inclusion in district.	1	5	2	3
Powers for compulsory purchase -	—	4	8	7
Altering number of local board members.	—	—	—	1
	18	37	32	25

Abstract of Inquiries under the Sanitary and Sewage Acts, from September 1866 to 31st December 1868.

——	1866.	1867.	1868
Complaint of default by local or nuisance authority under sect. 49, Sanitary Act, 1866.	7	12	17
Modification of boundaries of districts, sect. 6, Sanitary Act, 1866.	1	4	1
Formation of special drainage districts, sect. 7, Sewage Utilization Act, 1867.	—	4	—
Settling boundaries of district, sect. 8, Sewage Utilization Act, 1867.	—	1	—
	8	21	18

858. Would you state generally the nature of your different kinds of inquiries? The first I think is that of the settlement of the boundaries of districts?—Yes, this is the first in the abstract of inquiries under the Local Government Act. I have grouped them, and I will take them in order. The first is with regard to the settlement of the boundaries of districts, under the 16th section of the Act of 1858.

859. That is the section providing for the settlement of boundaries upon the adoption of the Act by any place?—Yes, in places not having known or defined boundaries.

860. The next kind of inquiry that you conduct is as to the special circumstances of places under 3,000 population?—Yes; those inquiries are held under the Local Government Amendment Act, 1863, section 2.

861. What was the object of that particular section?—When the General Highway Act was passed in, I think, 1862, a great number of small places adopted the Local Government Act, to escape the operation of the General Highway Act; and scores of places did this, particularly in Yorkshire, and in the north of England generally, not intending to do anything under the Local Government Act; and in order to counteract this movement, the Amendment Act of 1863 did not permit any place with a population of less than 3,000 to have the Local Government Act, unless it could show special circumstances for its adoption.

862. The next kind of inquiry which you conducted is as to the division of districts into wards?—Yes.

863. Under what Act is that?—That is under the Act of 1858, section 24; a district may be divided into wards by the sanction of the Secretary of State. I have only held two inquiries, as I see by my abstract.

864. The next kind of inquiry that you conduct is where there is an appeal against the adoption of the Act?—Yes, on appeals against the adoption of the Act, or for separation from newly formed districts.

865. You do not seem, by the abstract which you have put in, to have had many such appeals to inquire into since the first two years?—No, they are rather less in my list, but my brother inspector, Mr. Morgan, as well as Mr. Rawlinson, may have held appeal inquiries; those are the only inquiries which I myself have held.

866. May we gather from your abstract that appeals against adoption are not as frequent as they used to be?—It would seem not, from my list, but that may be accidental.

867. I observe in your abstract that you have made one inquiry on the subject of the sewage outfall beyond the district; under what Act was that inspection?—Under the Local Government Amendment Act, 1861, sections 6 and 7.

868. Was that a case in which the party interested objected to having his land passed through?—Yes, it was the case of a landowner who objected to the position of the proposed outfall works, and with very good reason, I think in that case.

869. I observe that you have made some inquiries relative to appeals against the building byelaws, under what Act are those inquiries made?—Section 34 of the Act of 1858 is the power under which the local boards make byelaws. The Secretary of State must give his approval to those byelaws, and before giving his approval he may make what inquiries he thinks proper to satisfy himself of their fitness.

870. Have you any observation to make as to appeals against auditors' surcharges?—There, again, there have been some important results. At present the accounts of every local board are annually examined and passed by the district auditor, and if he finds any items in those accounts, which are, in his opinion, contrary to law, he surcharges the persons who may have signed the cheques making such payments. The poor law auditor is also the district auditor for the purposes of the Local Government Act. The persons surcharged, if they think they are unreasonably charged, can appeal to the Secretary of State, and he can take an equitable view of all the circumstances, and either remit or enforce the surcharge. That is an alternative rather than taking the case to the Queen's Bench, where it would be heard purely upon points of law. In two instances I have held inquiries into the circumstances under which those surcharges were made, and it seems to me with so great advantage that, at a further point of my evidence, I will speak of the necessity of bringing the district auditor and the central authority into closer connexion in all cases.

871. Will you proceed to mention the inquiries under provisional orders, and first as to the extension of borrowing powers?—That is with regard to giving the local board where it has either constructed, or is likely to construct works, exceeding one year's rateable value, the power of borrowing up to two years' rateable value, and paying off the amount of the loan in 50 years instead of 30, which would be the case where the borrowing power is only exercised up to one year's rateable value.

872. That power of extending the borrowing powers by the Secretary of State is under the Act of 1858, is it not?—Yes; the Act of 1858 limited it to a particular class of works, and the Act of 1861 extends that power to any works.

873. With regard to the partial repeal or alteration of local Acts, under what Act is that power given?—These provisional order cases come under the 77th section of the Act of 1858.

874. As to separation from, or inclusion in any district, under what Act is that?—That is under the same section, the 77th of the Act of 1858.

875. Under what Act is the power for compulsory purchase?—That is under the 75th section of the Act of 1858.

876. And also as to altering the number of local board members, under what Act is that?—The Act of 1858.

877. Before we proceed to your inquiries under the Sanitary and Sewage Acts, what do you think are the general effects of those local inquiries upon the localities where they are conducted?—I think they are very useful in removing or softening down local prejudices, and in removing misconception of the working of all the Sanitary Acts.

878. Do you hold your inquiries in open court?—Always, and after public notice. The provision of the Local Government Act is that all the inquiries under its provisions shall be held upon public notice and after so many days' notice in the district, and we make a rule absolutely in all cases to hold it in public court, where all may attend and hear what is going on, and what is being said.

879. Does your abstract show that the provisional order system is on the increase?—It does.

880. Do you think that the system might be extended?—I think considerably.

881. In what way?—I would give facilities by means of a provisional order to provide, not universally, but where necessary, for the union of districts for the purposes of water supply and for the purposes of sewage outfall and sewage disposal, for highway maintenance, and to give local boards the same powers outside of their district to acquire lands and properties for the purposes of water supply as they have now outside their districts for sewage outfall and disposal.

882. Do you think there is any difficulty in the present local government system as to the powers for continuous inspection and supervision of districts?—I think there is.

883. Over works in process of execution?—Not so much over works in execution, as over the administration of the Local Government Act by local boards, and over the general sanitary condition of their districts.

884. What is the system of inspection which you mean to suggest by that answer?—Permanent inspectors, having a special knowledge of the work, making from time to time inspections of the kind which I refer to.

885. Have you made any estimate of the number of inspectors which would be necessary for such purpose?—No, I have not.

886. What would be the class of men that you would think fit for such a function of inspection?—I would not define any particular class. I think an engineer could easily pick up enough law on the subject to do the work, and I think a good lawyer, or any lawyer, might soon pick up enough engineering knowledge to do the work that I contemplate under the system of inspection.

887. Would you not be obliged to have some person with medical knowledge also?—As to medical men, where pure questions of health are concerned, I have not included those in my answer.

888. Is it your notion that there should be a few superior men of the description you have mentioned with a number of sub-inspectors for the more ordinary work?—No; I do not contemplate any system of sub-inspectors.

889. But an inspector to do the work that you propose must be a man of rather a superior education, must he not?—Yes. I would propose something of the same class of men that we have at present as inspectors under the Poor Law Board.

890. What is your opinion as to Local Boards intending to apply for Parliamentary powers being required first to submit their proposed bills to the Home Secretary for his approval?—I am assuming Parliamentary powers to be exercised by the local board.

Taylor, Esq., 5 May 1869.

I confine it to that. I think they should be required to submit their bills to the Home Secretary first.

891. Is there any case which has particularly led you to that opinion?—Yes, the case of Wallasey, opposite Liverpool, on the borders of the Mersey. The Wallasey Board has become a large trading company, not only for purposes of gas and water supply, which are all more or less analogous to the functions of a local board, but they have been providing steam ferries and landing stages, and they work those ferries, or did, when I was there a year and a half ago, at an annual loss of something like 7,000*l.* They applied to Parliament and got the clause inserted that I allude to in an Act dated the 15th of July 1867, entitled "An Act for making further "provision with respect to the ferries of the Wallasey "Local Board, and to empower them to extend their "gasworks, and to raise further monies, and for other "purposes." And by section 36 of that Act they are enabled to charge "The deficiency (if any) from time to "time in the Wallasey waterworks account, the Walla- "sey lighting account, and the Wallasey ferries account "respectively referred to in the Act of 1858, whether "under that Act or the Acts of 1861 and 1864, or "either of them, or this Act, shall be borne and paid "by the local board out of the general district rate, "and the amount of the general district rates, and of "the estimates of the money required for the pur- "poses of the general district rates shall respectively "include all monies required for payment of any such "deficiency, and also of any monies from time to time "due or accruing due for principal interest, or sink- "ing fund in respect of mortgages under the recited "Acts, and this Act or any of them charged on the "general district rate as a collateral security, and for "the payment of which the other securities (if any) "comprised in such mortgages respectively shall be "insufficient." Under that clause they have taken powers to charge the Wallasey district, one portion of it with a general district rate of 4*s.* 6*d.* and another of 4*s.* 10*d.*, and the fact, I may say, came accidentally to light from my having been there upon an inquiry relating to the surcharges that had been made upon certain members of the local board by the auditor.

892. And you think that there should be a general submission of such bills for the approval of the Home Secretary to check such powers being taken?—I think so.

The witness withdrew.

Adjourned to Thursday next at 2 o'clock.

Thursday, 6th May 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.	SAMUEL WHITBREAD, Esq., M.P.
The EARL of DUCIE.	JOHN TOMLINSON HIBBERT, Esq., M.P.
The Right Hon. LORD ROBERT MONTAGU, M.P.	EVAN MATTHEW RICHARDS, Esq., M.P.
The Right Hon. STEPHEN CAVE, M.P.	FRANCIS SHARP POWELL, Esq.
Sir THOMAS WATSON, Bart., M.D., F.R.S.	BENJAMIN SHAW, Esq.
Lieut.-Colonel EWART, R.E.	JAMES PAGET, Esq., F.R.S.
JOHN ROBINSON McCLEAN, Esq., M.P.	FRANCIS THOMAS BIRCHAM, Esq.

E. Norris, Esq., 6 May 1869.

(6.) JAMES EDWARD NORRIS, Esq., examined.

893. (*Chairman.*) You are a solicitor and town clerk of Halifax, are you not?—Yes.

894. And also clerk to the local board of health of that borough?—Yes.

895. What is the nature of that local board?—The corporation of Halifax acting by the council are the local board of health under the provisions of the Public Health Acts, and they are also the local authority for carrying out the provisions of the Nuisance Removal Acts.

896. Have those Acts been productive of good to Halifax?—Undoubtedly.

897. Have you a knowledge of their operation in other towns?—Generally in Yorkshire, and more especially with regard to the operation of the Acts in our own immediate district. I happened to have been clerk to two or three local boards before I was appointed to the office of town clerk of Halifax, and I and my partner are clerks to two other local board districts, Elland and Hipperholme, so that we are familiar with the working of the Acts. I was also formerly clerk to the Midgley and Warley local boards.

898. Your opinion being generally favourable to the operation of those Acts, does your experience enable you to suggest any amendments?—I think it would be desirable that the provisions of the Public Health Acts, taking also into consideration the provisions of the Towns Improvement Clauses Acts should be codified so as to make them applicable to large towns and populous districts and not to enable the ratepayers in agricultural districts to adopt the provisions of the Public Health Act simply and purely. In Yorkshire there is a strong feeling among the inhabitants of townships where they have power to lay their own poor rates and highway rates, to have self local government, and they have a very great aversion to be united with other townships, so as to form, as it were, a district of townships or a highway board; and for the purpose of avoiding being clubbed together and forming a highway board, they call meetings and adopt the Public Health Act, but really and practically they never put the Acts into force at all.

899. They have the power of putting into operation the Public Health Acts?—Yes, but they merely treat the Act as a dead letter. They have adopted the machinery of the Act so far as the election of the board is concerned, and they carry it out merely for highway purposes.

900. Has Halifax a local Act?—We have a special local Act, but we have also the Public Health Acts, in operation. The first Improvement Act for Halifax was in 1768, which is a very voluminous Act. That was repealed in 1823 and that Improvement Act was subsequently reviewed by order of the General Board of Health which was then in existence. In 1851 at the time when the Public Health Acts were adopted by the borough certain portions of the Act of 1823 were repealed and other portions were made applicable to the extended area of the district of Halifax.

901. What are the powers which you have under your special Act, as distinguished from those which you have under the public Acts?—I find upon examining the provisions of the Public Health Act and the Towns Improvement Clauses Act there are a great many similar provisions which have been enacted in the General Acts, so that there is a clashing in the working of the General Act with our Local Act.

902. Supposing your special Act was altogether repealed, what would be the difficulty of merging all your powers under the Public Acts?—Possibly as far as the Towns Improvement Clauses were con-

cerned it would make very little difference, but the Local Acts we obtained are compound Acts, and they very often contained provisions for water and for gas and lighting as well, which should be retained.

903. So that there are still some powers under the local Acts which you would not have under the public Act?—Certainly, and which we wish to keep alive; then the courts have held that the provisional orders which are made under the Public Health Acts can only incorporate Acts of Parliament which are not inconsistent with the provisions of the Public Health Act, so that in point of ,act many of those provisional orders which have been made are, as regards the Acts that they have incorporated bad, so far as the provisions are concerned of those Acts that are incorporated.

904. Under such a codification of the Public Health Acts which you have suggested, could your special Acts be merged altogether?—I think it would be more desirable that a general codified Act should pass for towns improvements, and then that there should be inquiries held in the towns to see whether portions of the local Acts could not be done away with, and other portions retained applicable to the special requirements of the town.

905. Do you not think that in a complete codification the local Acts that you are cognizant of in Yorkshire might be gradually done away with altogether?—I think, speaking broadly, that might be the case and a very desirable thing to be done.

906. Is the codification that you contemplate something the same relating to towns, as the Towns Improvement Clauses Act, 1847?—Yes, I think the Towns Improvement Clauses Act and the Public Health Acts together might be carefully analysed and codified so as to have a complete set of provisions applicable to all towns, and also a set of provisions, as far as the removal of nuisances are concerned, applicable to rural districts.

907. But the Towns Improvement Clauses and the other Consolidation Acts of that period were intended to be read with the special Acts, whereas, if I understand you the codification, if perfect, would do away with all the special Acts?—Yes, I think so. There are certain provisions of the Public Health Act which have been found to work very inconveniently indeed in our large towns in Yorkshire. For instance, power is given to the local board to make byelaws for the construction of new buildings and the formation of streets and the drainage of them. There are a great many of those regulations which have now become, absolutely necessary for every town to adopt, but inasmuch as they are byelaws and not enactments, every objection possible is raised by parties who do not wish to expend money or to conform to the regulations of the authorities, and they take us to the Court of Queen's Bench at considerable expense for the purpose of endeavouring to upset our byelaws on the ground of their being repugnant to the laws of the land, or unreasonable according to the idea of the parties who object, and we find the magistrates very often fall into the same view. They think the byelaw unreasonable, you have to come to Parliament and get an Act of Parliament passed with every clause in it that is desirable for the requirements of the town, a clause can be enforced, but a byelaw cannot. Last year I had a great number of those very byelaws embodied in a local Act of Halifax, which are now the law of the land. I submitted them to Mr. Taylor at the Local Government Act Office, and he was kind enough to give evidence on that occasion and to say he thought they were very desirable to be introduced into our Acts. They are now law, and we find them work exceedingly well; we have no trouble with the owners of property in enforcing them.

908. Are we to understand that your idea of the codification of the law would be to take the Towns Improvement Clauses Act, 1847, as the basis, and to include the Public Health and Sanitary and Nuisances Acts in it?—Such provisions of the Public Health Act as may have been found by practice and experience desirable to be codified and form one enactment.

909. All those remarks of yours simply refer to boroughs and towns; they are exclusive of rural districts, are they not?—Quite so. I think it is a mere farce applying the Public Health Act to rural districts.

910. What line would you draw between towns and rural districts?—I think the population line would be the best line. I should say from 10,000 to 12,000 inhabitants should be the lowest number to which the Act should be applied.

911. What would be the nature of the district Act which you would suggest for rural districts?—Something of the nature of a Nuisance Removal Act.

912. Do you think that that would be sufficient?—Yes. I think that the towns clauses are quite inapplicable to rural districts.

913. Would not some provisions for drainage and for sewage purposes be necessary?—I think that they would come necessarily under the head of removal of nuisances.

914. What would you say with regard to the water supply for instance?—We find that in the large towns in Yorkshire waterworks are made by those towns under the provisions of the Waterworks Acts and the local Acts which embrace an exceedingly large area of supply. For instance, the town of Halifax covers about 4,000 acres, but we have a limit for water supply which embraces not very far from 30,000 acres, a very large proportion of the parish, and in that area we have something like 12 local board districts under the Public Health Act. We supply many of them in bulk with water, and therefore, inasmuch as we are the sole purveyors of water within that area the towns or villages under the provisions of the Public Health Act, taking water from us in bulk would only require a power for the distribution of water for domestic and sanitary purposes within those areas, and the rural districts would only take water from us when they really required it, which they could claim under the provisions of the Waterworks Clauses Act—so that the Acts applicable to rural districts need not, I think, include any provisions with respect to water supply.

915. Except compelling them to make use of such opportunities as you have been alluding to?—Yes; for the purpose of nuisances removal.

916. With regard to towns having local improvements Acts, is it your proposal that they should obtain provisional orders for the purpose of assimilating their local Acts to the General Towns Improvement and Nuisances Removal Act?—Unless there are provisions in the general Act which would virtually repeal the provisions of the local Acts, of course I think it would be necessary that there should be inquiries in the large towns to ascertain how far those provisions ought to be repealed or to be retained in addition to the provisions of the general Act. The most convenient way is certainly by a provisional order; it is very inexpensive and it is an inquiry on the spot, which gives everybody an opportunity of being heard, and those inquiries are always held with great impartiality, and I think that they are generally approved of in the large towns.

917. Will you state how the Sanitary Acts have operated in Halifax?—I think that they are very complicated. The provisions of the Public Health Act and of the Nuisances Removal Act are in many clauses somewhat similar, but different in machinery for carrying them out. If those Acts could be analyzed and one simple Act passed for the purposes of the removal of nuisances, it would be much better than having so many to follow and examine.

918. Are the authorities under the different Acts different bodies in Halifax?—No, but of course the Poor Law Guardians have certain powers under the Nuisances Removal Acts, and also the local board has similar powers, and at times they clash.

919. Can you give us an instance of their clashing?—During the time when England was threatened

with cholera, I think the beginning of last year, or 1865, we certainly found at times that we had been inspecting premises which had also been inspected by the guardians; and unless we acted in concert or there were some means or other of ascertaining what each was doing, the two bodies would have been travelling over the same ground. It is much better that there should be one authority than two.

920. Whom do the corporation employ as inspector of nuisances?—We have a paid inspector, whose duty it is to examine the districts and to report to the committee appointed by the local board, then we take proceedings under the Nuisances Removal Acts or the Public Health Acts, whichever may be required, and enforce them through our inspector; but I am of opinion that all large towns ought to have a paid medical officer. I think that it would be very desirable indeed.

921. Is there a double inspection of nuisances in Halifax on the part of the corporation and on the part of the board of guardians?—No; I think you generally find that the inspector appointed by the board of guardians keeps pretty clear of the inspector of the local board.

922. With regard to the medical officer that you suggest, whose officer would he be, and what would his duty be?—I think that he should have the management of the statistics of mortality and the registration, and that he should be officially called in when required for the purpose of giving evidence in enforcing the provisions of the Nuisance Removal and the Public Health Acts. We find that medical men generally do not like to give evidence unless they hold some official position, because they very often come in conflict with their own patients and they are anxious to avoid being called before the justices. So that I think a paid medical officer would be a very desirable addition to the staff of officers appointed under any local authority for the removal of nuisances. The inspectors very often take little complaints and they are magnified and cause quarrels and bickerings in districts; but an educated man like a medical officer would go to a place at once and report to the central committee whether he thought it was a case that required immediate attention or not.

923. Supposing the Consolidated Act commenced by grouping under great heads all the different powers which were necessary for local government and for nuisance removal, and then proceeded to state what authority in each place, whether town, borough, or rural district, should possess all such powers as the locality required, would that be the sort of simplification which you think would be desirable, and if so one in which all the local Acts might merge?—I think so.

924. Have some towns to your knowledge been at the expense and trouble of codifying their Acts?—They have; Oldham is one case. Stockton-on-Tees this year is in Parliament for the same object, and in point of fact, local Acts now are becoming almost as voluminous as the old Acts were in consequence of the experience which towns have acquired. In carrying out the provisions of local Acts they find that there are many provisions requiring amendment and alteration and they from time to time put clauses into their local Acts to amend those defects; and I think that the time has arrived now for a general review of the whole question, in order that there might be a Towns Improvement Clauses Act in advance of the one of 1847.

925. So that Parliament has been going on making general legislation, while at the same time passing further local Acts?—Yes, the town clerks and the clerks of local boards are constantly in communication the one with the other, and when we come to Parliament for Improvement Acts we get as many modern Acts as we can, and we take out all the new improvements and make suggestions to each other, so that in fact the Improvement Acts now are becoming very heavy and expensive enactments.

926. Has the town of Halifax contemplated some such codification of its own local powers?—I am constantly applied to to codify our Acts; this book in my hand contains the Public Health Acts and the Sanitary Acts; we have four local Acts, and then there are all the Lands Clauses Consolidation Acts, the Waterworks Clauses Acts, the Police Clauses Acts, and the Commissioners Clauses Acts. I do not think I could go through the whole list, but I have no doubt that if all our Acts that are in force in Halifax were put together we should have a volume twice the thickness of this.

927. Will you now state consecutively the various objects of such an Act as you have suggested?—Of course it would have to be codified in pretty much the same way as our General Consolidation Acts are codified and the Towns Improvement Clauses Acts. You would first of all have to determine the local authorities who were to carry out the provisions of the Act; then you would have to provide for the different officers who are to act under the board, the law officers, medical officers, surveyors, inspectors of nuisances, and medical inspectors. Then you would have to follow up the provisions of the Public Health Act, and the Nuisances Removal Acts analyzed and of course eliminated, as many of those clauses have been repealed year after year, and they want codifying; provisions respecting the laying out of new streets, the erection of new buildings, town drainage, and power to enter lands for the purpose of carrying out a system of drainage. We find that the local boards are very much punished by owners of property claiming under the provisions of the Public Health Act compensation for making main sewers through their lands. Those sewers become drains for their own estates when they are laid out for building purposes, and yet we have to pay heavy compensation for going through the land to make the sewers; I think that when sewers are made for public purposes there ought to be no compensation paid beyond surface damage, providing the scheme in the first instance has received the sanction of the authorities, or was admitted to be for the advantage of the district itself.

928. Then would you have one authority in each place for all purposes?—Yes, for all purposes.

929. Would that also have this desirable effect of making all the areas of different works coincide?—I think so. In Halifax we have both the waterworks and the gasworks, we are the local authority for sewage, and we have the markets and the cemeteries under one Government, when our streets are broken up for repair we inquire whether any alterations are required in the water pipes, or gas pipes, or sewerage works, they are carried out at the same time at considerable less cost than they would if all those different undertakings were in different hands. Our rates in Halifax for all purposes, excepting poor rates are 2*s.* 6*d.* in the pound, the rateable value of the town is about 200,000*l.* and the population is 57,000.

930. Have you any debt in the way of loans taken up for works?—The capital required for all our undertakings of course is raised by borrowing money, pledged upon the undertakings and the rates. For instance, on our waterworks we have expended 320,000*l.* already, and we have borrowing power for 500,000*l.* and we are going to expend about 150,000*l.* more very shortly to increase our works. We have also got 168,000*l.* expended in gasworks.

931. Have you a good survey of your borough?—We are having one made, and there ought to be a clause in any Public Health Act that may be passed of this kind making it compulsory upon all local boards in all large towns to have a survey made on a considerable scale.

932. What would be the particular benefit of that?—The object of a good survey is that when a plan is sent in for street improvements or new buildings, you at once see to its position and the locality, whether it is likely to interfere with any other street improvement or to narrow a street. Halifax has long been considering whether we ought to have this plan, at last it has become absolutely necessary, and we are expending 2,000*l.* in having this survey completed.

933. What is the scale of your survey?—I believe it is 33 feet to an inch, it is a very large scale. The ordnance map is six inches to the mile; ours is a very large scale. The 4,000 acres, I believe, would cover about eight acres if the map were made into one, but of course we are keeping it in sections for the sake of convenience. Upon this plan we shall lay down all our pipes, water and gas, and sewage, depth of sewer, size of the sewers, and all the house drainage, the new plans that come in for approval will be immediately entered upon this plan directly the works are commenced. Then after we have a perfect plan in our possession we can send the particulars to the town's valuer, who will assess the property and brings it into rating directly it is completed.

934. When you suggest that owners of land should not be able to claim compensation for sewers being carried through their lands, do you think that the powers of extending sewers through lands are sufficient at present?—Yes, I think that the provisions are sufficient; but I think that we are mulcted very materially in damages. Instead of having those damages assessed under the provisions of the Lands Clauses Consolidation Act, I think that it would be much better that a simple plan was adopted, and that all costs connected with those inquiries should be taxed by the Taxing Master of the Court of Queen's Bench, and that they should not be left to the arbitrators to tax.

935. You would give an owner an appeal, would you not?—No, I do not think that there is any necessity at all for an appeal unless it be to the Local Government Act Office.

936. Have you any suggestion to offer as to using streams for sewers?—In many large towns where dyeworks are established and large cloth manufactories are carried on, we find the streams very black from the dyeworks; many of the towns also drain into those streams, and I think that the provisions of the Public Health Act with respect to obtaining injunctions against local boards to prevent draining into those streams are too arbitrary. I think if you injure owners below on the stream where the waters are comparatively speaking pure, the provisions cannot be too stringent, but in a manufacturing district where really the amount of injury done can scarcely be ascertained from the dirty state of the stream which has possibly existed for many many years, say 40 or 50 years, it is very hard indeed, that local boards should be restrained from draining their sewage into those streams under such circumstances. Then again, utilising sewage by irrigation works is almost impossible in thickly populated districts. As soon as we take our drainage from Halifax down to the bottom of the Hebble Brook we immediately come into another local board district, and they complain that we are bringing a nuisance into their district, so that the question is one of very great difficulty in densely populated places.

937. Are you threatened with proceedings at this moment?—Yes; we are threatened with proceedings at this moment. I may say that I think it is more a matter of retaliation, because we have been compelling a member of the town council to consume his own smoke, he is retaliating upon us by threatening proceedings to restrain us from draining our sewage into the Hebble, but the nuisance upon his own premises is considerably greater than the nuisance of the brook.

938. Have you any suggestion to make with regard to byelaws relating to new buildings and new streets authorized to be made under the Local Government Act of 1858?—I think that they might now assume the form of enactments.

939. Have you clauses in your Halifax Act for that purpose?—Yes, in the Act of 1868.

940. Have you any suggestion to make as to provisions with regard to houses and streets?—I think that provisions with respect to the removal of nuisances in the construction of new houses ought to apply to old buildings as well as new. For instance, there is a regulation that no habitable room shall be constructed over a privy or a watercloset; that is a very proper thing, but the law does not go so far as to say that when you find a room over a privy you can compel the owner to remove it if it be an old house, a house that has been constructed previous to the passing of the Public Health Act, or previous to the Act being adopted by the locality, if it is actually a nuisance and injurious to health you can compel its removal.

941. Do you think it would be wise by the Act of Parliament to enter into such detail, or in your opinion would it be better that such things should be more under the supervision of the borough surveyor?—That is rather a wide question. I think that the local authorities ought to have full power with respect to the construction of houses and their position, and also with respect to the construction of streets. In many places land is so valuable and cannot be obtained except at high prices; then builders will build nests of houses back to back, leaving very little room indeed for privy and ashpit accommodation, and the consequence is, that you will find in many cases 10 or 12 houses back to back, there will be five or six on each side, and at the end a nest of privies, perhaps one to every two houses, with ashpits connected, and those who live at the extreme end of the row would have to walk the whole distance to get to those places. They are very filthy places and very injurious to the whole neighbourhood; young people of both sexes meet there, and altogether they are injurious not only in a sanitary, but in a moral point of view.

942. But do you think that the question of what is the best mode of drainage and the best kind of privy is sufficiently settled to make it a matter of actual enactment by Parliament, or do you think that the borough surveyor might control those things?—I think that the local board might control those things.

943. Having made your chief proposals with regard to towns, you have suggested that a good Nuisance Removal Act is all that is wanted for rural districts, what do you think should be the authority to carry out the Nuisance Removal Acts in rural districts?—I think that the overseers of the poor or the surveyors of highways in rural districts would do very well.

944. Have you had much experience of the local government of villages and rural districts?—Yes, I am clerk to two rural local board districts where they adopted the Public Health Act greatly against my advice. I happened to be the churchwarden of one township and had to take the chair when the Act was adopted; I advised them against it, but the love of self government prevailed against my arguments, and they adopted the Act. It was no earthly use adopting the Act; it was done to prevent being added to a highway board district, no improvements whatever have been carried out under the provisions of the Public Health Act. They just go on as usual levying their highway rate and a general district rate to cover the salaries of officers, which is a very small thing indeed.

945. Do you think that the parish authorities would carry out a good Act, or do you think that the board of guardians as a rather larger body would carry it out more effectually?—No, I do not think that the board of guardians would do, because the unions in our district are very large. I think that you must have a body more immediately resident in the township itself.

946. But are you not afraid of a mere vestry acting in too narrow a spirit or of their officers being afraid to act with firmness?—Not if the Act is sufficiently stringent to make it a duty upon those parties to carry it out.

947. In what body would you place compulsory power to make those local bodies act?—I would give any ratepayer power to compel the local authority to carry out those provisions. I would impose the duty upon the overseers of the poor, or the surveyors of highways, and in the event of their refusing to carry out those provisions I would have a summary process before the justices.

948. That is much as it is now, is it not?—Very

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much the same as it is now, but the provisions are too large for the requirements of the rural districts.

949. Do you believe that the Acts are really carried out in rural districts?—Very little indeed, scarcely at all.

950. Then you think that it is the law which is in fault and not the machinery?—I think that it is the law that is in fault, giving power to the ratepayers to adopt the provisions of an Act which are totally unsuited to the requirements of the locality. For instance, the township of Midgley to which I allude, has an acreage of about 3,000 acres, and a good half of it is moorland where you shoot grouse, yet the Public Health Act is in operation there, which is manifestly absurd.

951. (*Mr. Hibbert.*) You stated that you would apply the Local Government Act only to large populations over 10,000 or 12,000; would you make it compulsory on such large places to adopt it?—I think that would be very desirable.

952. You have said that you would put rural districts under Nuisance Removal Acts; would you approve of the plan for making the Local Government Act compulsory upon all large populations, say over 10,000, or some other number, and then having another Act for parish or township government which should be compulsory, and conferring some of the powers under the Local Government Act, but not all of them?—Yes, I think so. I think that the provisions of the Towns Improvement Clauses Act, of the Public Health Acts, and of the Nuisances Removal Acts may be very advantageously divided so as to make one portion of the general Act applicable to large towns, and another portion applicable to rural districts.

953. Would not it be better to have an elective board in rural districts, rather than to leave the powers with the surveyor of highways and the overseers of the poor?—Yes, perhaps that might be better.

954. Would you think it more advantageous to have on that board the justices resident in the district as *ex-officio* members?—We find that the justices as a rule seldom interfere in those matters. I do not know what they may do in the rural districts, but with us they do not exercise their rights as *ex-officio members;* however, I think that it would be a very great advantage in a rural district that a magistrate should be on the board.

955. I presume you are aware that the surveyors of highways have authority over the highways of parishes, and the vestries have authority to make sewers or drains, but have no authority to interfere with the roads?—If they are constituted the sewer authority under the late Act, of course it would be the case that the sewer authority would have one control for the sewerage and the highway surveyor would have a different office.

956. If you had one board to carry out the whole powers in parishes you would get over that difficulty, would you not?—I think that if highway boards were constituted, it would be very desirable to make them the local authority for the drainage purposes in a rural district.

957. Supposing you had a parish board formed in this way, and you had an overriding authority either in the Home Secretary or in the county financial board, would you consider in case there was any difficulty in carrying out the powers, that that overriding authority might be sufficient to compel the parish authority to carry out what was necessary?—If the Act is sufficiently stringent to make it a duty upon the local authority to carry out the provisions of the Act and induce it to do so, I think that some summary proceeding before the justices, with an appeal to the quarter sessions would be quite sufficient, and would answer the purposes that you have indicated.

958. You think you would prefer that, to leaving the overriding power with the Home Secretary?—Yes, I think so, if the Act is sufficiently stringent of itself to impose the duty.

959. You have stated it as your opinion that the byelaws now in force in towns might be enacted in some general Act; do not you think that there would be an objection taken to that which would prevent any new byelaws being made?—No, I do not think so at all. I think you will find that, first, there is a general objection to the local authorities making any regulations or framing any sort of regulations for the purpose of compelling the enforcement of certain rules as to constructing houses, the thickness of walls, and the levels of streets, and so forth; but after they have once got into operation you find that the owners of property come to the local authorities, and will point out whenever there is likely to be a disturbance of the system of continuous streets and the laying out of land advantageously.

960. Is it not a fact that the byelaws which are now sent up to the Secretary of State for confirmation are much better than they were some years ago?—We do not send the byelaws to the Secretary of State for confirmation; we constantly receive circulars to say that they regret that such and such a byelaw has been upset by the Court of Queen's Bench, and suggesting an alteration. We prefer under the circumstances to settle our own byelaws, or have them enacted in a local Act, which is a very expensive process. There are certain regulations which I think have become absolutely necessary in all localities. I think it is very desirable that before a house is built, or a new street is set out, a plan should be sent in to a certain scale setting out the line of the street, the level, the proposed mode of drainage, the depth of the sewer, and how it is connected with an existing system; and with respect to buildings, the distance from the centre of the street, the thickness of the walls, and the height of the rooms, to show that there is sufficient ventilation; and I think that plans which may be vetoed by the local board as being contrary to those special regulations ought to be rejected, and that the local authority ought to have power to reject them.

961. Is it not a fact that if the byelaws were enacted in some general Act, and you found that they did not work well in any particular town, you would be unable to alter them without coming to Parliament?—That would be the case.

962. Would not that be an objection to their being enacted in any general Act?—No; because so long as the Act remains an Act we can always enforce them; if we have to come to Parliament again for the purpose of getting additional powers, the rate-payers can then petition Parliament against the provisions, if they are found to be arbitrary, and have them modified. But I think that there are certain regulations which ought now to assume the form of enactments.

963. I understand you to say that at Oldham and some other place they had obtained local Acts which were much in advance of the Acts in other towns?—They found that the byelaws would not work, and they did not wish to have so many Acts of Parliament consolidated with their own, and they preferred to have one simple Act; in fact the Towns Improvement Clauses Act, applicable to Oldham in one Act, and a codification of such Acts as they thought were necessary, and they found that a very simple process, but it is one which I dare not undertake at present for fear of interfering with existing interests which have sprung up in consequence of the application of those Acts.

964. Are you aware that in the Salford Act—differing in that respect from the other local Acts that have been passed—they give all the clauses in *extenso* which they incorporate from the different general Acts?—They do.

965. Do you think that that is an advantage?—Of course it is one way of printing a bill with the Consolidation Act set out in full in the text, and that was done in Salford, I believe. It makes it more expensive in one sense, but I do not know whether it is not a good plan to have those provisions brought together in one Act.

966. But is it not much better for the ratepayers that they should know exactly what the law is?—I think that the ratepayers are in the habit of putting their own construction upon an Act of Parliament, very often totally different to what it ought to be, and if there are too many town clerks in the town council you very often find that you cannot guide them at all, and your own opinion is questioned upon the construction of your own Acts.

967. (*Mr. Whitbread.*) With regard to the pollution of streams you express an opinion, I think, that it was a hardship upon manufacturing districts to call upon a town to provide other means of getting rid of the sewage instead of carrying it into the stream—where would you draw the line?—I think there are so many conflicting opinions upon the question now that we ought not to be called upon in a hurry to expend a large sum of money to get rid of our sewage until Parliament has determined what course shall be adopted. It seems to me to be the general opinion that irrigation works are the best means of getting rid of our sewage so as to relieve it of the deposits and pass the water in a purer state into the river. That is decidedly the best plan that you can adopt in a district where you have hands available for the purpose; but I think that in a manufacturing district like Halifax, where the water, and possibly the sewage, has received so many chemical agents from dye-works, that may possibly neutralize the beneficial effects of the sewage for agricultural purposes, we ought not to be called upon to expend large sums of money in irrigation works or in getting rid of our sewage until there is some definite and defined rule laid down by Parliament. There is a strong opinion that deodorising and filtration cannot be done effectively, and yet some thing will have to be done, no doubt, to get rid of our sewage. I am afraid that if we take our sewage into the district down below Halifax, we shall very likely be indicted for a nuisance by those districts.

968. Your answer, I think, covers the whole area of the country, not excluding the manufacturing districts; it goes to the effect that every case should be dealt with on its own merits?—Yes, I think very much so. Croydon, and some other places, I know have very large irrigating works, and they do very well, because they have a large tract of land which they can irrigate; but we no sooner get out of our borough than we are in another local board district, with a population of 10,000 or 12,000 odd, and if we take it higher up, and go up into the Calder Basin we come to Sowerby Bridge where there is another local board, and those people may require for themselves the ground we are seeking to get for irrigating purposes.

969. Would not that be met by increasing the areas?—If you mean that several towns should unite together to carry their sewage a long distance, that would be very expensive. That is one plan which is suggested in the report of the commissioners on the pollution of rivers, but it would be very expensive.

970. (*Mr. Bircham.*) Are we to understand that you would be in favour of bringing rural districts into unions of about 12,000 inhabitants?—Villages or townships having a population of 10,000 or 12,000 I think ought to have a Towns Improvement Clauses Act, such as I have suggested.

971. Then you do not approve of bringing villages or small populations into unions amounting in the whole to 12,000?—No, not at all. I do not approve of that.

972. You stated with regard to water supply that it would be unnecessary to provide it in the rural districts, but I think your illustration was confined to the cases of rural districts in the immediate vicinity of towns?—Yes, within the water supply of large towns.

973. But there must be vast districts which are not in any such predicament?—Quite so; in cases of that kind of course it might be desirable that they should have power to find water for themselves.

974. In large rural districts or towns not amounting to such a population as 8,000, or 10,000, or 12,000, you would leave the parish, would you not, as the unit?—Yes.

975. Would you consider that the Nuisance Removal Acts would be sufficient for the health government of such districts?—Yes, for such rural districts.

976. Is not the action of the Nuisances Removal Act rather remedial than preventive?—No, I do not think it is.

977. Must you not have the nuisance in active existence before the Act comes into operation?—Yes, and then it would be remedial, of course.

978. Would you have no preventive or anticipatory jurisdiction in the rural districts?—I think that the sewer authority would have that jurisdiction. You generally find nuisances collect for want of proper drainage works.

979. Then you would contemplate that there should be an authority capable of making sewers for the proper sewerage of the district?—Certainly. I think that all those provisions which are necessary for the removal of nuisances ought to be available in rural districts.

980. And would you extend that to the anticipation of nuisances in rural districts?—Yes. But I think that the rules with respect to streets and buildings, which large towns more especially require, are not so necessary in rural districts. It would be a very arbitrary thing to say in small villages—"You must build your cottage of a certain size, in such position, on such a distance from the centre of the road." I do not think that that is necessary; but in a town it is very important that there should be sufficient space left for ventilation and for the traffic as well.

981. But in rural districts, although it might not be necessary to say within what distance of the centre of the road a house should be built, there might be rules necessary also for the health of the inhabitants?—Yes, for instance, I think you might compel them to whitewash their cottages two or three times a year.

982. And provide that there should be water supply, privies, ashpits, and conveniences of that description?—That I should leave in the hands of the highway board, or the surveyors of the highways having the control of the roads.

983. But do you not think that it would be better in the hands of a board than of the surveyor of parishes as the unit?—As I suggested, if that board were to be elected under the provisions of an Act of Parliament, of course it would be better to have a special board appointed for those purposes than to leave it in the hands of the ordinary surveyors.

984. Would it occur to you that in bringing the Sewage Acts into operation in rural parishes unless they were brought together into unions, there would be an absence of the proper officers in a parish to carry them into effect?—That very much depends upon the size of the locality. The parish of Halifax is a very large district, considerably larger than the county of Rutland, but it is made up of something like 25 townships, each township having the power of levying its own highway rate and poor rate for poor law purposes, except so far as the Union is concerned, and of managing their own township affairs as individual parishes.

985. You spoke of the Lands Clauses Consolidation Act. You would think, would you not, that a power to obtain an easement through a landowner's property, as distinguished from a power to purchase the property, would be salutary?—I think so. Under the Public Health Act it is not termed an easement, but you have a right to enter and go through lands if the surveyor says that it is necessary for the purpose of a system of sewerage, by giving notice to enter; but after you have entered the owner has the power to compel you to pay him compensation for any injury that you may do by going through his lands. In nine cases out of ten it is an imaginary injury—it is a mere easement, which is a very great advantage to the property itself, and arbitrators are appointed and sit

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for two or three days hearing the evidence of the surveyor, and all sorts of imaginary injuries are raised, and I think it is trifling with the public funds, and acting contrary to the interests of the public, that compensation should be paid for such works.

986. But is it not the case that if you were to apply to the Secretary of State to give you compulsory powers under the Local Government Act he can only give you power to put in force the Lands Clauses Consolidation Act?—Not for purposes of towns drainage, we do not require the Lands Clauses Consolidation Act for that.

987. In any case in which you do require compulsory powers over land the Secretary of State gives you the Lands Clauses Consolidation Act?—If we want compulsory power to take land for any Towns Improvement Act we have to give notices and apply to the Home Office to send down an inspector to report, and he prepares a provisional order which is subsequently confirmed by Parliament, and then after Parliament has sanctioned the order, we have compulsory powers to take lands under the provisions of the Lands Clauses Consolidation Act.

988. Those are confined, are they not, to the taking of lands as distinguished from acquiring any easement?—Quite so.

989. (*Mr. Richards.*) You have spoken of the powers given under byelaws; is not one of the powers that is usually given with regard to the quantity of space that should be left around a new building?—Yes.

990. If those byelaws became an enactment how would you meet the exceptional case of a house in a very valuable street where ground is very valuable?—I think that the owners of property ought to give way for the public benefit, and that the sanitary regulations in a town ought to be considered before a landowner's interests. I think back-to-back houses are exceedingly injurious, and if you forbid the construction of such houses in populous districts, you would find that a better class of house could be built a little way out of the town more cheaply than having those houses built in the thickly populated parts of the town. If you do not carry out such regulations, you have a labouring class resident in the centre of a populous district, and a few years hence you have to remove all those houses for street improvements, and for the general improvement of the locality; whereas, if you compel the owners to build houses under proper sanitary regulations, they will go out beyond the populous districts, and will acquire land at a cheaper rate, and they will construct houses which altogether are much better, and have much better sanitary advantages than if they built in the centre of the town.

991. My question referred rather to one of the main streets of a town; would you insist upon the same space around a house that had been taken down to the ground floor in a main street as you would in a locality which is not in immediate contiguity to the main thoroughfares of the town?—I think there should be sufficient space left in the rear of the house. In the centre of a town every shop or house would be facing some large street. I believe that in most towns the actual height of the house is regulated by the width of the street, and therefore you have sufficient space in front, but you ought to have sufficient space to the rear of them.

992. Would you define that space in an enactment?—Yes, according to the area of the house. I believe it is so in the metropolitan Acts now.

993. You are aware, are you not, that in byelaws in practical operation there are exceptions allowed by local boards?—Yes, but you cannot get all local boards to think alike.

994. You have spoken of the powers given by local Acts for the manufacture of gas and the supply of water; and you stated, did you not, that there was economy in having the roads under one authority?—I think it is very desirable that the local authorities should if possible have the water and gas in their own hands.

995. In any new enactment with regard to public health, which might be passed as the result of this Commission, would you extend the power to towns to manufacture their own gas?—Yes, I think so, where gasworks and waterworks do not exist. If there are gas and water companies, of course they must be purchased, and that is a question entirely of agreement; but I think that where no gasworks or waterworks exist in populous districts, it would be very desirable to give to the local authorities power to construct them; but as to the extent of borrowing powers necessary for such works, I think there ought to be a controlling influence—that the Local Government Act Office or the Home Secretary ought to have some power to restrain the improvident borrowing of money for such purposes.

996. Assuming that a public sewer goes through a street, and the local board, under the provisions of the Public Health Act, calls upon the householder to drain into that sewer, would you give the person who has received notice power to go through any land that the engineer or surveyor thought desirable that he should go through?—I think that the plan ought, in the first instance, to be adopted by the local authority, and if so I think there ought to be compensation to the private owner. You should distinguish the difference between a public sewer, applicable to the whole district, and one which simply is used for the purpose of draining individual houses, or two or three houses. I think, in the latter case, the burthen of the cost of that drain ought to be borne by the parties who are immediately benefited by its construction, and that some compensation ought to be made to the owner affected by the making of the drain from a private house till used by him for his own purposes.

997. Would you in rural districts think it desirable that the local authority should have the plan of a house submitted to them previous to its being built?—No, I do not think that that would be necessary in rural districts.

998. (*Mr Powell.*) I presume that the case which you mentioned at the commencement of your evidence of the difficulty which may arise in a place like Halifax, if the community is forbidden to discharge sewage into the river, was fully laid before the Rivers Pollution Commission when it inquired into the condition of the Aire and Calder valley?—Yes, very fully.

999. Can you state to me any reason why the highway board should be so unpopular that localities have resorted to the Local Government Act with a view to escape the further operation of the Highway Act?—Merely from a natural love of self-government that exists in the manufacturing districts.

1000. Not from fear of any burthen that the Highway Act would impose?—I do not think so. I do not think that that was ever taken into consideration at all.

1001. I presume that in the Act which enabled you to raise half a million for the purposes of water supply at Halifax, you had power to borrow?—We had.

1002. How many years are allowed you by that Act to repay the sum so borrowed?—Those powers have been varied from time to time. In 1853, when the first Act was obtained for our waterworks, 40 years was fixed as the time within which we were to pay off our debt. In 1858 an extension of time was given for the purchase of land and the construction of works, and I think 50 years was given. In 1865 I applied for an extension of the boundary of the borough, and in that case 50 years was again repeated. In 1868, when we applied for an extension of our waterworks, and obtained powers to borrow 500,000*l.* in the whole, I got 100 years.

1003. There does not appear at first sight to be any principle which has regulated the number of years. Do you know of any reason why you should have 40 years on one occasion, 50 years on two others, and 100 years on the fourth occasion?—I think that for towns improvements, new streets, new bridges, or

anything of that kind, it is desirable that it should be limited.

1004. But it is the fact, is it not, that there does not appear to be any principle?—I know of no principle.

1005. Do you think it is just that two towns competing with one another in the same markets should in the one case have 100 years to repay their debt for water, and in the other case they should only have 40 or 50 years?—If the circumstances are identical, of course there can be no reason in it, but if the circumstances vary, there may be very good reasons for giving 100 years to one and limiting the other to 50.

1006. Could you describe in a few words the considerations which should govern Parliament in saying why one town should have 50 years and the other town 100 years?—Take Halifax, for instance; the rate-payers within the borough have pledged themselves and pledged their borough funds for the repayment of the monies necessary for the construction of our waterworks. We do not receive the entire benefit of those works within the borough; we have a large area of supply including many townships, and we are compelled under the Waterworks Clauses Act to supply those districts if they call upon us for water. It is a process of gradual extension, and if an accident were to happen to our works, or there was a bad trade, so that the sale of our water did not increase and progress year by year, I think that in such case the undertakers ought to have a longer period within which to pay their debt, so as to give them an opportunity of fully developing the scheme and obtaining customers for their larger undertaking. If you are allowed to borrow a sum of money for an undertaking which is confined exclusively to the town itself, and not to a very large area, then I think that there should be a rule laid down, and 50 or 60 years would do; but where you have a large area of supply and you are obliged to expend a large sum of money in the first instance with the risk of having customers, you ought to have time allowed to pay that debt off so as to allow the income of the undertaking to come in to meet the sinking fund.

1007. You mean that given a certain length of piping and given the same population as that with which you have to supply, if you have populous districts to traverse your piping for your own population, you have to construct works on a larger scale in view of those contingencies that you mentioned?—Yes, we have.

1008. But do not those populous neighbourhoods pay you a water rate?—They pay no rate at all, they pay a rent for the water they get.

1009. And that recoups you to a certain extent, does it not?—Only if they take it; we can lay no rate outside our borough; we can only charge for the water consumed, and if we had any accident to our works, or if our income is not sufficient to meet the interest upon the monies expended upon the construction of those works, we have no power to lay a rate. We have all those contingencies to meet and the risk of accident, and therefore I think we ought, considering everything, to have a longer period to pay that debt off in than if we simply had works sufficient for the immediate requirements of the town.

1010. Is not this the case, that the duty is imposed upon you of constructing your works, but there is no compulsion upon the localities outside the town to take advantage of those works?—Precisely so.

1011. And you base your argument upon that?—Yes, I do.

1012. I think you said that the difficulties in making byelaws arise from questions which occur from time to time as to whether those byelaws were *ultra vires*?—Yes.

1013. Do not you think there would be great difficulty in framing an Act of Parliament comprehending the whole country which should be so far elastic without the assistance of byelaws as to meet the case of different communities?—No, I do not think there would be.

1014. But you must come to byelaws on the one hand, or to pure discretion on the other hand, and is not a byelaw a security to the community against capricious action on the part of the local authorities?—Yes, if those byelaws are to affect the regulation of some slaughterhouse or market, or anything of that kind, I think such regulations are good; but when provisions are considered to be absolutely necessary, and common to all towns, I do not see why they should not assume part of an Act of Parliament.

1015. I will give you an illustration. A town in Yorkshire says that a street of a certain length shall be of a certain width. It might be very convenient for that town to impose such a law, but might it not be extremely inconvenient to impose a law of such stringency upon all the towns in the country?—We have such a provision in our Acts for 30 feet; we will not allow any street to be made of less width than 30 feet; but we have also the power when plans are sent in to say that the street shall be of a width up to 75 feet, but we are bound to pay compensation for the land taken.

1016. Is that point defined by your Act, or is it by a byelaw?—It is by our Act.

1017. With respect to rural districts. You stated, did you not, that you are a clerk to the local board of Hipperholme?—My partner is clerk to the local board of Hipperholme, and I know the circumstances.

1018. Might not Hipperholme be described as a manufacturing hamlet. It consists of a number of mills and large manufactories, and also of inhabitants engaged chiefly in those works; and the population according to the census of 1861 appears to be 7,320. Why should you deal with such a community as a rural community?—If you look at the census of Hipperholme, I think that it says Hipperholme-cum-Brighouse. Hipperholme-cum-Brighouse is a township consisting of two hamlets. There is the hamlet of Brighouse, which is a townlet I daresay of from 8,000 to 10,000 inhabitants, probably more; and Hipperholme is a rural hamlet of the same township, consisting of gentlemen's villas and residences. There is scarcely a mill in the place. Mr. Titus Salt lives in a large house there at Cliffe Hill, with a large park around it; but there are no mills in Hipperholme. The population is chiefly in the hamlet of Brighous That is a townlet, and not only does Brighouse consist of the townlet of Brighouse, but it goes into another township, the township of Clifton. Hipperholme proper is purely a rural district, consisting of gentlemen's houses, villas, and farms. Many of the farms have been struck out of the district. We have not got the whole of the hamlet; we have only taken the portion of that hamlet which may be considered the populous district, but yet I think that a great many provisions in the Towns Improvement Clauses Act are not at all applicable to that district.

1019. But if you have a village such as we know exist in great numbers in Yorkshire, where you have a mill, where you have a population employed in that mill, and where you have that population, although it may be comparatively small in number, still often very dense on the site which it actually occupies, why should you not have regulations strongly in favour of health in the case of such a community?—The provisions of the Nuisances Removal Act would be quite sufficient for a district of that kind.

1020. Do not you require provision against overcrowding?—Those would be in the Nuisances Removal Act.

1021. But do you not require some provisions as regards the width of the streets?—No, that is under the Towns Improvement Clauses Act. I do not think it is necessary in a district of that kind to have provisions as to streets. It is very desirable to have provisions as to buildings, but not as to streets.

1022. But you would have byelaws, would you not, with reference to what you so much complain of, back-to-back houses for example?—I should prefer an Act for sanitary reasons.

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1023. You stated that in the case of drains passing through private properties, the community should pay for surface damage, and surface alone?—Yes, for a public sewer.

1024. What do you mean by the term surface damage?—Supposing you go through a field for the purpose of getting a proper gradient of outfall for your sewer, in that case the farmer ought to be compensated for the injury done to his land.

1025. But you know from your experience that that which is to-day a mere field in the neighbourhood of Halifax or Bradford will, in a very few years, become valuable building ground, and then the owner of it, if there is a sewer through his land, cannot build upon the sewer or within a certain distance from it without risk?—That is quite true; but his land would be very much increased in value by reason of having a sewer through it; it would be taken no doubt in the most advantageous position according to the formation of the land through which it passed.

1026. Do you think that the owner is entitled to no compensation for the occupation of a certain portion of his land by the sewer?—No, I think not for an easement of that kind.

1027. But we will suppose that there is a large water main which occupies considerable space, what would you say as to that?—But that is not a sewer; you would have to purchase an easement for a water main to go through a man's land; you might move a water main at any time, whereas a sewer when once made is a permanent work, and a permanent work of that kind is one which is supposed to be placed in the best position to meet the requirements of the district for drainage purposes. A waterpipe is a pipe which may be shifted according to circumstance.

1028. Then your answer would apply to drainage alone, and not to water-pipes?—Not to water-pipes; certainly not.

1029. Have you found any cases in your experience where the local authorities have taken advantage of the Acts, and have exercised their very considerable powers, and so have borne hard upon the owner's property?—No, I do not know any such instances.

1030. Supposing a community owned a market, and any individual were to build a structure which the community might think would come in competition with them as owners of the market, have you heard of any cases in which the local authority have been oppressive?—I do not know what you mean by oppressive. If you mean this, that where a market has been established in a town, and the provisions of the Markets Clauses Act are in operation, and a rival market has been established in a court, yard, or field, within the ambit of the market's authority, the market authorities of the town should see that the competing market should be tolled or contribute to the public who have established the public market for the benefit of the inhabitants at large. I think it is only fair that they should enforce the law against the other market.

1031. Do you think that the local authority should prevent anything being built which in their opinion might become a rival market?—I think so, and I think with respect to slaughterhouses that where the local authority has constructed good and commodious slaughterhouses, sufficient for the requirements of the district, they should compel all slaughtering to take place in those slaughterhouses, and not allow other slaughterhouses to be planted here and there, all over the town.

1032. Are you aware that in the neighbouring town of Bradford the byelaws against back-to-back houses have been found to diminish the supply of houses so much that those byelaws have been modified?—I believe there has been a great contention in the town council upon the question of back-to-back houses. I think the question was taken up by land speculators and a difficulty in the town. There were a great number of back-to-back houses, and the injustice appeared to be this, that to forbid the continuance of those houses was a hardship to the owners of property immediately adjoining to those who possessed back-to-back houses, and that to prevent that injustice you should sweep them away altogether.

1033. But are you aware of the fact that the byelaws against back-to-back houses had been a considerable time in operation until there was an excess of population as compared with the supply of houses, when they found it necessary to relax those byelaws in order to house the population?—I believe there was a division in the council, and that at one time the byelaws were confirmed, and at another time they were modified. It entirely depends upon the constitution of the council. Probably, there may be a council next year who will carry resolutions that there should be no such thing as back-to-back houses. There is a bill before Parliament this year promoted by the Keighley Local Board, which has gone through the committee of the House of Commons where they have scheduled the provisions of the Public Health Act with respect to houses and streets, to give them the force of law, and in that case they have not allowed more than four houses to be built together in one nest.

1034. Is that by a private Act?—Yes.

1035. And you would wish to incorporate the provisions of that clause in the general Act?—Yes, I think that it would be a very good thing, it would ensure ventilation around buildings.

1036. (*Mr. Shaw.*) You told us that you thought that there should be a medical officer to every local board?—Yes, in large towns.

1037. Have you considered how he should be appointed and removed?—I think he ought to be at the will of the board the same as the other officers.

1038. Would not there be a difficulty if he is an intelligent and scientific medical man rather in advance of the state of things around him? If he did his duty vigorously he might give displeasure to his employers and might be arbitrarily removed?—Of course all officers are more or less looked upon as under the authorities that set them in motion, and if they found that their officers were too zealous possibly you might find some boards who would deal with them in the way you suggest; they would consider that they were going rather beyond the scope of their office, but if such a medical officer found that to be the case he should resign.

1039. That would not help the community, because the probability would be that if he did resign, an inferior man would be appointed in his place?—Possibly, but if those officers are to be appointed by the local boards we must run the risk of that.

1040. Have you considered the point of the Secretary of State, or any other authority, having a veto upon his removal?—No, I have not thought of that, because when I made the recommendation that a medical officer should be appointed, I made the recommendation as applicable more especially to towns of large populations of something like 30,000 or 40,000 or 50,000 inhabitants and not small towns of 10,000 or 12,000. I think that an inspector of nuisances is quite sufficient there, but in a town like Halifax with 57,000 inhabitants, although the council might not like to appoint a medical officer, still my own view is that it would be an advantage to the town to have a medical officer.

1041. Has it not been the case, or been supposed to be the case, in many places, that that very objection has arisen, and that the more an officer did his duty the less he pleased his employers?—I do not know any particular instance, but such cases do occur no doubt.

1042. You mentioned, did you not, that in some cases byelaws at present are made with the assent of the Secretary of State, and you say that those are liable to be upset by the Court of Queen's Bench, because they are *ultra vires*?—They are not made with the assent of the Secretary of State; they are made by the local authority and sent up to the Home Office, and after a certain period they come into operation, but the Secretary of State has no power to inter-

fere with those regulations, and we must run the chance whether we are exceeding the law or not.

1043. Would it meet your views to have power to make byelaws to be assented to by some department like the Local Government Act Office, so that they may have the force of a statute when once they are made?—I had a bill prepared in 1864 which I left with Mr. Taylor of the Local Government Act Office, and asked him if he would promote it through the Home Office for the purpose of giving legal effect to byelaws, until they had been declared illegal by *certiorari* before the Court of Queen's Bench, so as to prevent any question arising before justices as to the reasonableness of those byelaws. He approved of the bill at the time, but I think he thought it better to wait till certain byelaws assumed a common object for all towns, and then probably they would be incorporated in some future Act.

1044. I think there was some difficulty suggested by you or pressed upon you, that if byelaws were incorporated in an Act they would be too rigid; that might be met, might it not, by an Act saying such and such things should take place unless the local authority should otherwise order?—I am not prepared to do away with byelaws altogether, but there are certain regulations which have assumed the form of byelaws which may now be legalized and become enactments.

1045. Speaking in the spirit of that answer, I ask you whether in any case where it was doubtful whether a byelaw could or could not be incorporated in an Act of Parliament, in the case, for instance, of preventing houses being placed back to back, the difficulty might not, to a great extent, be met by its being incorporated in this form, "unless the local authority should otherwise order"?—I think if such a byelaw as that were to be framed, and to be objected to by the community, an appeal might go to the Home Office, thus give the parties an opportunity of questioning it before the Home Office.

1046. You stated with regard to the utilization of sewage that there was great difficulty when you come into the district of another body, and then you were asked why that might not be met by extending the area, and I think your answer was that it would be very expensive. To what had that reference?—I understood the question to be this, that supposing Halifax had no ground in the immediate vicinity which was capable of being used for irrigating purposes, without going into the district of another town, Elland for instance, and when you got to Elland you could not utilize the ground below Elland without interfering with the town of Brighouse, whether it would be desirable that there should be a union of those three districts for the purpose of making a common sewer through the whole district until you reach ground which was capable of being used by the whole of that area. That is the question, as I understood, that was put to me, and I say that it would be very expensive indeed to make a main sewer of that kind, which probably would be some miles in length, and if you carry out that principle, you might drain the whole of the Calder basin into the Humber, or take it down to Pontefract.

1047. You would then have more parties contributing to the expense, would you not?—Yes, but you would also have to take up a large portion of the county and keep it exclusively for purposes of irrigation works for the sewage of large towns, and it would be dangerous to build in the neighbourhood, I think.

1048. As regards rural districts, do you not think that the great difficulty is that however good your rules may be, they come into the hands of uneducated and narrow-minded administrators?—Yes, that may be so.

1049. What is the remedy for that?—In rural districts that would be very likely to be the case, and it would be better to have a union of those rural districts the same as they have highway boards, and then to give the power to the highway board to make sewers and everything necessary for the sanitary regulations of that particular district. You are much more likely to have an educated body of men to look after the interests of the community than giving it to small farmers.

1050. Then you would not keep the parish as the unit?—No; you must remember that townships in some districts are of parishes themselves, and I do not think it is desirable to keep the parish as the unit in the rural districts, not in that sense.

1051. You would not think the evil met by interposing a county board with a certain power of overriding and modifying the decision of a narrow-minded local authority?—I think if you unite them in the way which you suggest, and if your Act is sufficiently comprehensive, it would be sufficient to leave it in the hands of the highway board to have the overriding authority; I am referring now to nuisance removals only.

1052. But the difficulty is that the local authority under the Nuisances Removal Act will not act?—No; but then I would draw the Act so as to impose it upon them as a duty that might be enforced.

1053. But the duty is to exercise discretion; and are the justices to say whether that discretion has been well or ill exercised where the local authority has done something?—I doubt very much whether a section could be framed so as to make it discretionary, and yet be a duty. If you draw a clause making it a duty to exercise discretion, it is a discretionary power, and there is no duty imposed. If you say that they shall do so and so, and say what they shall do, that is not a discretion, that is a duty.

1054. Take the case of magistrates, there are often cases which the magistrates in the exercise of a discretionary power are called upon to hear and decide, and if they hear and decide, no matter how, the Court of Queen's Bench will not interfere; but if they wholly refuse to exercise that discretion a *mandamus* issues to set them to work?—Yes, but I do not think that that quite applies to a sanitary board.

1055. Supposing that they may do a thing in half-a-dozen ways, if they have done it in any one of those ways are the magistrates to say, "You have done something but you have not done enough"?—I think that is hardly a parallel case. The justices would compel the board to carry out such provisions as are set out in the Act to compel the removal of nuisances; but what I desire is a clause sufficiently stringent to make it a duty.

1056. (*Mr. Cave.*) Have you had much experience in really rural districts?—No, I cannot say that I have.

1057. Probably you would hardly like to give an opinion as to whether the present Poor Law Union would be a good unit for such districts?—No, I should not like to give an opinion upon that.

1058. I think you said that any ratepayer, by complaining before the justices, should be able to compel the local board to act?—Yes.

1059. Do you intend that answer to apply to large towns such as Halifax?—I intend it to apply to all enactments where the duty is imposed upon the local authority to get rid of any nuisances, and where that authority neglected to perform its duty, I would give any inhabitant the power to go before the justices to compel the authority to carry out that enactment.

1060. I presume you mean in a case in which the duty was clear?—Yes.

1061. Would you give an appeal in such a case under the Justices Procedure Act to the court of quarter sessions?—Yes, if a question of law arose an appeal by case might go to the Court of Queen's Bench.

1062. With regard to fresh legislation, I infer from your answers that you consider it a question of degree, that many enactments which are now byelaws in local Acts have been found by experience to be applicable to the whole county?—Yes.

1063. And those you would bring into a general Act?—Yes.

1064. But you would still contemplate the necessity of byelaws in particular districts applicable to

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cases which might arise from time to time?—Yes, certainly.

1065. And that in such cases you should proceed as now by a provisional order?—We do not proceed by a provisional order in framing byelaws; it is a power given by the Act itself to the local authority to frame byelaws to meet certain objects.

1066. In case you wanted to make byelaws which were beyond the scope of your present Acts, you would proceed, would you not, by a provisional order to get that power?—If you mean that the machinery of obtaining power by provisional orders should also be applicable to framing byelaws, I do not know that it would be necessary to do that, but I think it would be desirable that when byelaws have been framed, they should go to the Home Office for approval and confirmation, and until they are upset by the Court of Queen's Bench, they should have the effect of law as applicable to that particular locality.

1067. If you want fresh power to make other byelaws your plan now is to proceed by a provisional order, is it not?—No.

1068. Must you have a fresh local Act?—We can only make byelaws under the provisions of an Act of Parliament, and if we want any new provisions, we are obliged to go to Parliament for a special Act.

1069. That is very expensive, is it not?—Yes.

1070. Cannot you do that now by a provisional order?—Only within the scope of the Act.

1071. Would not a provisional order which has the force of an Act of Parliament enable you to make fresh byelaws upon fresh subjects?—I do not think it would, beca use the provisional order must be based upon the Act, giving the local authority power to make that provisional order, and the provisional order must be in respect of certain objects which must be set out in the Act. A provisional order is for the taking of lands, the purchasing of waterworks, the purchasing of gasworks, or some object of that kind, but not for the making of byelaws. I have not known any instance of that being so; perhaps Mr. Taylor may know. He has put into my hands the Local Government Act, 1858, in which I find that section 75 with the subsections under it, and sections 77 and 78 are the only sections applicable to provisional orders. First of all, under the 75th section the local authority may obtain a provisional order giving them power to purchase lands compulsorily under the provisions of the Lands Clauses Consolidation Act for any purpose of the Act, —markets or whatever it may be. There is a form given of the publication of notices, and the services of notices and the petition to the Home Office. Then an inspector comes down who hears evidence and makes a report, and a provisional order is drawn up upon that report, and then an Act is passed to confirm the provisional order. A provisional order may also be obtained for the purpose of separating districts which have been once formed, if any portion of the inhabitants object to being continued within that district.

1072. But not for anything so undefined as making byelaws?—No, there is nothing with respect to making byelaws.

1073. When you speak of no compensation being allowed to a landowner through whose land a drain is carried, I presume there ought to be if he could show specific damage, such, for instance, as destroying a spring of water by the drain, which might often be the case?—I think that if the local authority did anything unreasonable, and going beyond the scope of their Act, he could go to the Court of Chancery for an injunction to restrain them from making the drain, showing that it was unreasonable, or that a better route might be taken; but as a general rule, I think that the local authority, with a competent surveyor, ought to be the judge as to the line of main sewer.

1074. But supposing that a particular line, which might be the best line, were such a line as would inflict material damage upon the individual, such as destroying something belonging to him for the advantage of the whole community, ought not the owner to be compensated in such a case?—If it is a stream that is cut off certainly he ought to be compensated, but I am speaking of the land itself. The cases have gone so far as this that where in the making of a main sewer in a road, wells or underground waters are affected there was no remedy, because no action could be brought; but if a stream is interfered with, is it protected. In fact the Public Health Act provides that no stream or watercourse shall be interfered with by the works to be carried out under the provisions of the Act.

1075. But in the case of a well within a private property for instance, which you say might be injured by a drain, would not that be a fair matter of compensation?—I think not; because that would be interfering with the general law with respect to underground water injured by adjoining wells; the owner of which could not have any remedy. If you sink a well in your yard adjoining to your house, and your neighbour sinks a well which draws the water from your well, you have no remedy.

1076. But if your neighbour comes into your yard and sinks a well there, it is a different case?—Quite different.

1077. And that is what you are proposing to do?—Yes; but my meaning was that if you make a main sewer through a man's lands for the purposes of the public advantage, there ought not to be any compensation paid to that owner for such an advantage. If you injure a stream or knock down a building or anything of that kind, that is surface damage and special injury.

1078. By destroying a well you might send a man two miles for water which would be a very serious thing?—I should avoid going near a well. I should not touch it.

1079. You would not carry your principle so far as to prevent the landowners showing material damage?—No, perhaps not; but I cannot help thinking that a clever surveyor can make out a claim for anything.

1080. (*Earl of Romney.*) I think you spoke of certain places which are under private local Acts, and also are under the general local Act, and in that case many of the provisions under each of those Acts are sometimes conflicting and sometimes the same?—Undoubtedly.

1081. Then I think you suggested that in those cases it would be desirable if they were put entirely under the Public Act, and if the Local Act were superseded or got rid of?—I think so.

1082. In order to carry that out, would not the only way of doing it be by repealing the private Local Acts?—I should first make the general Act applicable to all towns, and where any local Acts were in force then those provisions that were sought to be retained should be retained by provisional order confirmed.

1083. Your object being to bring the town under the general law; if a private Act is in existence you can only get rid of that private Act by repealing it?—You can only get rid of it by repealing it.

1084. That would be a very expensive way and you would require another private Act to repeal that private Act?—No, it is not a very expensive way, for an inspector comes down from the Local Government Act Office and holds an inquiry, which takes place on the spot, as to whether it is desirable that any provisions of the local Act should be retained in force in the locality. If he finds it is desirable, he makes a report to the Home Office, and those things are scheduled to the Act which is passed, without any expense to the locality; it is a public Act.

1085. Then it is a public Act which repeals the provisions of the private Act?—Yes.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 10th May 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON. Bart., M.D., F.R.S.
Lieut.-Colonel EWART, R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JAMES PAGET, Esq., F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

(5.) ARNOLD TAYLOR, Esq., further examined.

A. Taylor, Esq.

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1086. (*Chairman.*) What is the general inference which you draw from the Wallasey case to which you referred in your previous examination?—The desirableness of every local board, should it apply to Parliament, being required to submit its bill first of all to the central authority for their previous approval.

1087. You fear that local boards having larger functions than ordinary local authorities, may obtain through the Local Government Act larger powers of rating than they ought to have?—Exactly so. You see how they got it in this case. Under the Local Government Act they could not borrow any money for the legitimate objects of that Act without the sanction of the Secretary of State; but they can now by going to Parliament borrow any amount of money they choose to raise. Under that Act, in the case of Wallasey, they have put the payment of their deficiency account upon the general district rate.

1088. We will now proceed to the next topic of your evidence. Can you give the Commission copies of Provisional Orders which will illustrate the various works that are effected under the system?—Yes, and other objects attained under the provisional order system, such as the alteration and repeal or partial repeal of Local Acts already in force.

1089. The powers of provisional orders under the Act of 1848 are extinct, are they not?—Yes.

1090. And the principal powers of provisional orders at present existing are under the sections of the Act of 1858?—Yes.

1091. But there are also powers of provisional orders under subsequent Acts?—Yes.

1092. Will you state the general scope of provisional orders?—The 75th section of the Act of 1858 enables local boards, under a confirming Act of Parliament, to put in force the compulsory powers of the Lands Clauses Consolidation Act, for purchasing lands or properties within their district.

1093. Is that by the process of a provisional order subsequently confirmed?—Yes. The remainder of the section provides for the manner in which that provisional order is asked for and granted by the Secretary of State upon inquiry. Then the 77th section of the Act of 1858 provides for the incorporation or the separation of districts, from local board districts; also for the alteration of local Acts already in force within local board districts, and for the alteration of any provisional orders or orders in council granted under the Public Health Act, 1848. The 78th section provides for the extension of borrowing powers of any district from one year's assessable value of the property of the district to two years. These are the three sections of the Act under which provisional orders are granted.

1094. And those powers are exercised under the powers of the Act of 1858, superseding similar powers given under the 141st section of the Act of 1848 which this section repeals?—Yes.

1095. Those are the provisional orders relating to the Local Government Act?—Yes.

1096. Exclusive of the Sanitary and Sewage Acts?—Yes, exclusive of them. I might, perhaps, add that the 19th section of the Local Government Amendment Act, 1861, allows the increased borrowing power to be applied for for all works, the Act of 1858 having limited it only to works of sewerage and water supply.

1097. Is it provisional orders of this kind that you offer us copies of in illustration of the various works they authorize?—Yes. I have selected a number, all offering some different point or another.

1098. Will you give us one or two instances of works that will best illustrate the question?—I will take the case of Bristol. The last order was given on the 20th of May 1868 for acquiring a great deal of property, which is scheduled for pulling down, and thereby widening and improving various streets in Bristol; that is a good illustration of a street improvement provisional order (*delivering in the same*). Then Great Malvern is another instance. There the Local Government Act is administered by the Improvement Commissioners, who have given to them, partly under the Local Government Act and partly under their Improvement Act, a great number of powers (*delivering in the same*).

1099. Do you mean the power of borrowing?—Powers for all purposes of local government and regulation of streets, and we have even embodied what is known as Bass's Act for the suppression of itinerant musicians.

1100. In the execution of those provisional orders I presume you have to take part, as inspector acting for the Secretary of State?—Yes.

1101. We will now proceed to your suggestions with reference to byelaws; you seem to suggest that a code of leading byelaws might be made applicable by general law to all towns?—I think so.

1102. Would it be something in the nature of a Towns Clauses Act?—Yes, something of that nature.

1103. Why do you think the present system of byelaws defective?—There is uncertainty, and their binding power is liable to be questioned; and very often local jealousy and jobbery render them a dead letter.

1104. Do you mean, by rendering them a dead letter, that the best byelaws are not made, or that when they are made they are inoperative?—Rather, that when made and confirmed by the Secretary of State, they are not put into practical operation.

1105. In what way would you suggest a code of byelaws which would escape this obstruction from jealousy and jobbery?—I do not know that my suggestion would be so effective in that way as in giving greater certainty to the law.

1106. Do you mean that there would be better laws, or that the laws would be more easily carried out?—A byelaw under statute would have greater force than now, when it is merely a byelaw of a local board, and it would be better law.

1107. In what sense would it be better law?—Because it would have more force. At present anybody can question a byelaw, and can interpose to prevent its being put into exercise.

1108. Do you think that a code of byelaws would be better law, or would it include the same laws, only with provisions for being better carried out?—The byelaws would be much the same, only they would have greater certainty; and being part of a statute, there would be less tendency to question their validity.

1109. Do you think that they would be less questioned and that the judicial authorities would pay more respect to them than to the other?—No doubt when they came before the judge they would. I hold very

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much the opinion, which was expressed on the last day of the sitting of the Commission, by Mr. Norris, the town clerk of Halifax, on that point. I have brought with me and I put in a copy of the form of byelaws drawn up by the Home Office, which the local boards adopt with trifling modifications, according to local circumstances (*delivering in the same*).

1110. Can they adopt as much as they like?—Yes, but it is practically a body of byelaws upon which almost all local boards have framed theirs.

1111. You mean that most of the local boards have adopted the model of the Home Office which you put in?—Yes.

1112. What suggestion have you to make as to more direct communication between the district auditor and the Home Secretary?—I think certainly that every audit by a district auditor of a local board's accounts should be forwarded to the central authority as a matter of course.

1113. Would that be an annual report?—Yes, with any remarks made upon it that the auditor might think fit.

1114. Is not it your experience that such annual reports come in as a matter of form and are not much attended to?—No, they do not come in now.

1115. I mean similar reports?—I think that an auditor, sending such a report, would, if there were anything peculiar in the case, draw attention to it.

1116. As it is, is it not the fact that the Home Secretary only knows the facts of any misappropriation of rates by an appeal against surcharges by the auditor of the local board?—Yes, that is so. I referred in my previous reply to an abstract of the accounts, and to an auditor's report upon the accounts annually. I believe that there is something of the kind I have proposed already existing under the poor law audit system.

1117. The case you have already alluded to, Wallasey, could not have occurred if such a report had been made?—No.

1118. What suggestion have you to make as to the advisability of the extension of borrowing powers?—At present a local board, having borrowing powers up to one year's assessable value, borrows its loan, repayable by instalments in 30 years, and if it has an increase of borrowing powers up to two years' assessable value it has 50 years in which to repay its loan. I think, that for many objects for which local boards borrow money, they might in all cases have 50 years.

1119. Do you mean that they might have the larger power without applying to the Secretary of State?—Yes.

1120. What are the cases which you allude to in which such larger powers might be exercised?—I mean, generally, all those objects in which the work done or the improvement effected, would be of practically the same value at the end of the time of borrowing as it would be at the commencement.

1121. Would you give some instances of that?—I take first a class of cases which is on the increase; namely, the purchase of land for sewage irrigation. There the land no doubt would be even more valuable at the end of 50 years than at the time when it is first acquired.

1122. Both by the improvement by means of the sewage and possibly by the extension of buildings?—Yes, and from the general tendency of land in this country to rise in value. Then, again I take property bought to be pulled down, for street widening and improvement, the improvement is as good at the end of 50 years as at the commencement. Then, money borrowed for the erection of public buildings, such as offices, town halls, baths and washhouses, land bought for public parks and recreation grounds, and water rights and properties acquired for the purposes of water supply.

1123. Would it not be possible in some of the cases that you have referred to, such for instance as baths, washhouses, and so on, that at the end of the term they might have become useless, or some better situation might have been found for them?—Scarcely at the end of 50 years; a well-erected building would not be materially impaired in value by that time. In some cases the value would, I consider, be actually greater; wherever land is acquired, or water rights, I consider that these would be of absolutely more value.

1124. In alluding to sources of water supply, do you include waterworks and reservoirs?—Yes, I make the suggestion by way of lightening local burthens. I see by the tables 30 years at five per cent. entails an annual charge of 6*l.* 10*s.* 1¼*d.*, whilst for 50 years at five per cent. the annual charge is 5*l.* 9*s.* 6¾*d.*; so that it is about 1*l.* in the 100*l.* I am assuming that both loans are raised at five per cent.

1125. What would be the difference in the rate of interest, including the sinking fund, in the case of a loan of 30 years and 50 years?—Supposing the loan is raised at five per cent., 1*l.* per cent.

1126. Have you any suggestion to make as to the Local Government Act Office being made more self-supporting?—I think that it might be made completely self-supporting.

1127. How?—On the principle of charging, and making each place pay for the work done for it in the office.

1128. That would be merely covering its expenses as far as it relates to surveys of works?—No; I mean all the work done for towns in the office.

1129. Would you make the charges for work done cover all the expenses of the Local Government Act Office?—Yes I would; and it might be done at a very trifling cost to the different places.

1130. You have a suggestion to make, have you not, as to costs being charged on frivolous appellants?—Yes. I may say that the principle of repayable expenses is already admitted to a certain extent, and I would carry the principle further.

1131. How far would you carry it?—I would carry it to all work done in the office. At present, in all cases of a provisional order inquiry, the inspector's travelling and personal expenses are charged to and repaid by the district. I think that his time and the time of the other officials in the office occupied with the work of such provisional order should also be charged to the district. I may add that the secretary of the office has prepared a statement, which I believe is at the Home Office, showing the principle carried out in detail. (*See Appendix*, p. x.)

1132. The 81st section of the Local Government Act of 1858 provides that the orders of the Secretary of State shall be binding, and the secretary may make orders as to the costs of any appeals to him under the Act, and the parties by whom such costs shall be borne; would you alter that section?—I think that it should be carried further. I think it should include all the costs of the appeal connected with the office. It would have the effect of checking groundless appeals and frivolous complaints.

1133. Is Crown property exceptionally exempted from rating under this Act?—Not under the Act, but there is a general exemption of all Crown property from taxation, and in some cases it works with particular hardship and injustice.

1134. Is it your opinion that Crown property should pay the same as private property for sanitary works?—Yes, for the same class of property.

1135. Can you give us any instance which illustrates your suggestion?—It has been brought before me in consequence of an inquiry which I held in the township of East Dean, in the Forest of Dean. The whole Forest of Dean is Crown demesne, except such portions as have been sold, or have been alienated from time to time, by the Crown. The township of East Dean contains several inhabited centres, and my inquiry was chiefly directed to one called Cinderford, a place of about 5,000 people; I have seen no place in the course of my experience in a worse sanitary condition. There this exemption of the Crown property brings things to a dead lock, there being so little property to rate.

1136. With regard to the Sanitary and Sewage Acts, have you considered that those Acts generally

are too indefinite, both with regard to the construction and also the continuance of local sewer authorities?—I think so.

1137. Particularly with regard to rural districts?—My objection applies to all districts, because the difficulty of working is found wherever the Act is attempted to be put into operation.

1138. In what way would you make the provisions of those Acts more definite?—Generally, by assimilating the Act to the provisions of the Local Government Act, with regard to the formation of districts, and the formation of boards or committees, or whatever they may be called.

1139. In fact that the nomination, election, continuance, retirement, and qualification of the committee ought to be provided for in those Acts, as in the Local Government Acts?—Yes, I would do away with the idea of the vestry as the local authority.

1140. Why would you do away with the vestry?—Because the vestry is, in point of fact, nothing more than the ratepayers of the parish.

1141. If it is so what would you put in its place?—The responsibility should be upon the ratepayers, and I would put them in motion through the churchwardens or overseers, as is now done under the Local Government Act, and if there were no churchwarden or overseer, as in some districts there might be none, then, as under the Local Government Act, through an officer appointed by the Secretary of State on application to him from the district.

1142. What would be the difference between summoning the ratepayers and asking them to form a committee, and the vestry forming their own committee?—I would put the Act in motion by some machinery of this kind, which again is that of the Local Government Act, the requisition of a small number of ratepayers, five in very small districts or ten in larger ones. They should make a requisition upon the churchwarden, or the overseer, or the summoning officer appointed by the Secretary of State to call a meeting of the ratepayers to put the Sanitary Act in operation; that is the mode of working under the Local Government Act.

1143. In fact the ultimate committee would be the same in both cases, but by the plan which you propose you think that the Act would be set in motion more efficiently?—Yes, certainly more efficiently. At present a vestry is anything or nothing. Three people attend and make a vestry, or 300 may make one.

1144. The vestry, I think, is in the schedule of the Sanitary Act, the local authority for a rural district?—It is both the Sewer Authority under the Sewage Act and the Local Authority under the Act of 1866.

1145. What suggestion have you to make as to special drainage districts?—I think that no special drainage district should be formed without the previous sanction of the Secretary of State.

1146. Why so?—Because at present the formation of the district, being left entirely to the discretion of the vestry, such districts are often formed of a very objectionable character. They are far too limited in size for one thing.

1147. Do you think that the Secretary of State sending down his inspector would probably form better districts?—I think so. No new district can be formed under the Local Government Act except after inquiry, and I would extend the same principle to the Sanitary and Sewage Acts.

1148. By your Abstract B of your inquiries as inspector, which you have put in in evidence, does not it appear that in a great number of cases the Sanitary and Sewage Acts have been a dead letter?—Yes, in an immense number of cases the Acts are not worked. Theoretically they are in force everywhere, but practically they are a dead letter in a great number of cases.

1149. You are now speaking, are you not, chiefly of rural districts?—Yes; my remarks generally with respect to the Sanitary and Sewage Acts refer to their application to rural or semi-rural districts.

1150. I presume that rural districts, generally speaking, are more backward than towns, although sanitary measures are more wanted in them than in towns?—Yes, that is my experience.

1151. Is it your opinion that in a great many villages throughout England people drink water which is polluted?—Yes, I am sorry to say that that conviction has been forced upon me by inquiries which I have held in villages.

1152. Will you mention some cases of that sort that you know of?—I would give as instances the village of Wouldham on the Medway, near Rochester, the village of Hill Morton, near Rugby, Chulmleigh in North Devon, Epping in Essex, and Bromyard in Herefordshire. I should think that Wouldham, the village itself, speaking roughly, may have a population of from 1,200 to 1,500: at Hill Morton, through the exertions of the Rev. Charles Darwell, sanitary works, will shortly be in operation, the committee of the vestry having complied with the Secretary of State's order.

1153. Do you think that the law is a dead letter amongst those villages, sometimes from the village being of too small an area to carry out the Act?—I think it is more from apathy and from an idea that it is a great absurdity to have anything like works of sewerage and water supply in a village.

1154. Do you think that more powers are wanted either to unite or even to compel the union of country parishes for larger purposes than one single village can carry out?—I think it would be desirable if there were such powers of union.

1155. Would that be by an extension of the provisional order system?—I think that that would be a convenient mode of effecting it.

1156. In fact, to make the provisional order system now existing in towns extended to rural districts?—It is extended for some purposes, and I would extend it for the union of districts. Under the Sewage Act of 1867 there is a permissive power for the union of districts, for the purpose of sewage outfall. Under provisional order, I would, in certain cases make the permissive power compulsory for other purposes as well, particularly for water supply.

1157. Will you state what is the existing provisional order system with regard to rural districts under the Sanitary and Sewage Acts?—Under the Sanitary and Sewage Acts the provisional order system—upon precisely the same principle as that laid down in the Act of 1858—is extended to places under the Sanitary and Sewage Acts, for the purpose of sewage outfall and disposal only.

1158. Is that the only purpose?—That is all.

1159. Would you extend the byelaw system upon any points to rural districts?—I think that some few leading byelaws, with regard to the construction of houses and their position, so as to give them the means of drainage into a sewer, would be very desirable.

1160. What would you say as to the audit of accounts?—I would extend the same supervision by the auditor, to districts under the Sanitary Acts, as to local board districts under the Local Government Act.

1161. What is your opinion as to the power of complaint given under the 49th section of the Sanitary Act?—I think that it needs restriction. A complaint can now be made by a single person on the slightest grounds, and I think that the complaint ought to be supported by at least one-tenth of the ratepayers concerned, either in number or rateable value; in that way you would ensure a certain amount of local support to and interest in the complaint.

1162. Do you give that opinion as the result of your experience as to the working of the 49th section?—I do.

1163. What is the power of the office under the Sanitary and Sewage Acts to charge any expenses in a district?—It has no power, even for the identical objects for which charges are made by the office under the Local Government Act.

1164. And you think it should have similar power?—I think so.

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1165. Is there no provision for defraying the preliminary expenses that are incidental to the Act?—There is no provision, and that is often a difficulty in places where they have to recover the expenses they may have incurred in first setting the Act in motion.

1166. And what do you say with regard to the Secretary of State charging the costs of appeals?—I think that the same power should be given him in that respect as is given under the Local Government Act.

1167. In all those points you think that the Sanitary and Sewage Acts are defective, and that they ought to be supplied with similar powers to those which are given under the Local Government Act?—I think so; and I would extend the powers of the inspectors as well. At present we have not the same power under the Sanitary Acts as we have under the Local Government Act, and if an inspector holds an inquiry he has no power to command the production of papers or plans as he has under section 80 of the Local Government Act, nor has he the power of summoning witnesses.

1168. Is there still a conflict of duties between the local and the nuisance authorities?—There is a very great conflict. I would just refer to sections 22 to 34 of the Sanitary Act of 1866, which give various powers to the nuisance authorities for controlling hospitals, the bedding of hospitals, and the conveyance of patients. And again to section 37, which imposes upon the local authority the duty of erecting the hospital itself. I have heard a difficulty raised in districts as to what is a hospital; is it an empty building with so many rooms, or is it a building properly equipped with beds and bedding, and conveniences for patients. I know that that question arose in the Isle of Wight.

1169. Are you aware that there is a water supply bill now before the House of Commons?—Yes, by accident I saw that there was a bill with the names of Mr. Biddulph, Colonel Stuart, and the Marquis of Lorne on the back of it.

1170. Does not that propose new local authorities?—I am not very certain about it, but it appears to do so by section 10. The local authority is there proposed to be the churchwardens and overseers with the consent of the vestry.

1171. So that if that bill passed into an Act instead of simplifying the law it would increase the confusion?—Yes, there would be another element of confusion introduced. And since I was examined on the last occasion my attention has been drawn to the Petroleum Act, which makes the town council in a borough and the commissioners under a Local Improvement Act, where such is in force, the local authority. In harbours, everywhere, the harbour authority is the authority. But, in all other places the justices in petty sessions are the local authority, so that a local board, in a purely local board district, has no authority to work the Petroleum Act.

1172. I may ask you generally, whether you entertain the same views as to the advisability of an intermediate authority between the central and the local authorities, as were expressed by your brother at the head of the Local Government Act Office?—I do.

1173. That the area of such intermediate authority should be a county?—I think so; or subdivisions or unions of counties, according to their size, population, and trade.

1174. Do you think that such intermediate authority should have power over all the local boards and all local authorities within that district in respect to water supply, works of sewerage, sewage outfall and disposal, and the enforcement of the Nuisances Removal Act?—Yes.

1175. And as to the smoke nuisance, and overcrowding of dwellings?—Yes, and as to dwellings unfit for human habitation, and the neglect of scavenging and privy accommodation, and the enforcement of byelaws.

1176. How would you get rid of the present conflict between the local and the nuisance authorities?—I would rather see both duties centred in the local authority, withdrawing the control now exercised by the boards of guardians as a nuisance authority, and transferring such nuisance authority to the district boards.

1177. By district board you mean your suggested intermediate authority?—Yes.

1178. What sort of number do you think that that intermediate authority ought to consist of?—I offer my opinion with very great hesitation, because I know that it is opposed to public opinion on such matters; but in my idea the board should be a very small one. It should be composed of three or five members—gentlemen specially qualified, giving their whole time to the work, and appointed directly by the Government and paid by the Government.

1179. Do you think that such a small body of paid officers might be the officers of a larger body, such as the quarter sessions or a committee of the quarter sessions?—I would rather see the governing body and the executive body in one.

1180. Are you referring now to rural districts, or would you include towns in this suggestion?—I would put all places under the control of such a board as I suggest.

1181. Not such large towns as Manchester, for instance?—If there were any need for interference. The district board would only interfere where it was rendered necessary by the neglect of the local authority.

1182. How would you propose to defray the cost of such a district board?—I would defray the cost of the district board and its officers out of the local taxation of the district over which it had authority; the board to account for its expenditure either to the proposed county financial boards, or to the central authority.

1183. The supreme central authority you propose still to be the Secretary of State for the Home Department?—Yes.

1184. Why do you object to unpaid members elected by the localities?—I think that a district board elected by the locality would but reflect in a greater or less degree the apathy or the reluctance of the ratepayers, or the local authorities that appointed it. The great point is, to ensure prompt and direct action by an intermediate body, free from local prejudice or partiality.

1185. Would you give such a board control, not only over sanitary matters, but over such large questions for instance as the rivers pollution?—I would.

1186. Would you give them the supervision of large areas for agricultural and land drainage?—I would.

1187. Then would you propose that the supreme central authority should still reserve its right of inquiry when it pleased?—Yes, and I would also give in all cases the power of appeal from the district board by the local authority to the central authority.

1188. (*Earl of Ducie.*) You stated as your opinion that you think that Crown property should be rated in the same manner as private property for sanitary purposes?—Yes.

1189. You mentioned the case of Cinderford; will you state in what way the existence of Crown property at Cinderford has acted adversely to the interests of the locality in a sanitary point of view?—From the fact of the whole land in East Dean having been originally Crown property, the local board are prevented from having the ordinary control over what are there called, by courtesy, the roads. They have no right to take possession of these as in any other district, either for their repair or maintenance. And again, the property of the Crown being exempt from rating, the local board have so small a basis upon which to borrow money.

1190. And would that be simply remedied by rating the Crown property in the same way as private property?—In a great degree. At Cinderford the local authorities would have a further very strong claim, I think, on the Crown to make good the consequences of past neglect, as well as to contribute to the local

taxation, the Crown property being rated like any other.

1191. In a letter from a gentleman in that district, he seems to imply that there is a great deal more than the mere bad state of the roads, for he says that he cannot imagine anything worse to exist in the kingdom or in any heathen village in Africa, and that it is a disgrace to the community; do you agree with that?—I have seen no place in England in a worse condition than Cinderford, and I have also seen many native villages in South Africa but none so bad as Cinderford.

1192. (*Mr. Hibbert.*) You stated that most local boards had adopted the model byelaws suggested by the Home Office; do the large towns under the Local Government Act, or any towns which have applied to Parliament for Improvement Acts, generally adopt those byelaws, or do they seek to obtain wider powers than they would get by the byelaws?—In some few cases within the last two sessions they have obtained power to embody certain byelaws in their Local Improvement Act. Halifax has done so, and I believe Oldham also, and I heard from Mr. Norris's evidence on Thursday that Keighley is doing the same.

1193. In those cases have they adopted the same byelaws which are recommended by the Home Office, or do they adopt different ones?—My knowledge is confined to Halifax, and the byelaws embodied in the Halifax local Act were nearly the same as ours, with some few additions.

1194. Would not it be the case if you were to enact byelaws in a statute, that if a town found that there was a wish for better byelaws than those which are enacted in the statute, there might be a difficulty, unless they went to Parliament specially to have improved byelaws for that special place?—I think you have now got such an amount of experience with regard to the working of byelaws that you might draw up a code with regard to certain leading points that would stand and would not require alteration.

1195. Still byelaws are not by any means perfect?—No, not at all. I am supposing that certain leading byelaws will be embodied in a statute, as to street construction, for instance, and the structure of houses, the stability of the structure, and the position of the house, and with regard to its means of drainage into a sewer.

1196. Is there anything in the byelaws suggested by the Home Office with respect to the size of the rooms of houses to be built in different places?—No; they only provide for ventilation.

1197. Are you aware that in the Manchester Improvement Bill, now before a Committee of the House of Commons, they introduce byelaws with respect to the size of rooms?—I do not know that.

1198. With respect to the working of the Sanitary and Sewage Acts in rural districts, I understand you to say that you would do away with the vestry, and that you would give the power, on the requisition of a certain number of ratepayers, to call upon the churchwardens to summon the vestry and to consider the question of putting the Act into operation?—To call a meeting of the ratepayers.

1199. Would not it be better that the Act after passing should apply to all districts at once?—I would consider it everywhere in operation. I would make it as general as it is now, but I assume there must be some action of the district to put it in operation to set it going.

1200. When you use the words "put it in operation" what do you exactly mean?—I should have said to set it in motion.

1201. With respect to the Local Government Act, would you make it compulsory in large towns above a certain population?—No, I would let them have it as they have at present. I would allow them to adopt it.

1202. Is it not the fact that there are several large towns in the country with populations above 10,000 which have not yet adopted the Local Government Act?—Yes, some of the largest have not.

1203. Are there not several large towns which are neither under any Improvement Act nor under any local authority whatever?—There must be several. *A. Taylor, Esq.* 10 May 1869.

1204. Would not it be desirable in a town where the population exceeds 10,000 or 12,000 that it should be compelled to adopt the Act?—I think it would be very desirable, if the Local Government Act were declared to be in operation in all towns above a certain size, and, in the same way, the Sanitary and Sewage Acts in districts with less population.

1205. Might it not be advantageous to apply the Local Government Act to large towns and make it compulsory in all towns above a certain size, and to apply the other Act which you suggest, which would include the Sanitary and Sewage Acts and other similar powers of the Local Government Act, to all towns under that population?—There is this difficulty, when you take population as a basis, that you may have a township or parish of the population you speak of, say 10,000, but no town in the ordinary sense of the word, of anything like that population.

1206. That is to say, you mean that the population may not be brought together into a small area?—No, you might have a large parish with scattered inhabited centres as I call them for want of a better name.

1207. Do you know the case of Ulverstone in the north of England?—Yes.

1208. Do you remember that that is a crowded population?—Yes.

1209. It is only within two or three years that the Local Government Act was adopted in that town, I believe?—They did not adopt the Local Government Act, they have gone to work under the Sanitary Act, but theirs was a case in which they certainly should have had the Local Government Act.

1210. They refused to adopt the Local Government Act, did they not?—Some of the ratepayers wished it, but the majority was against it, and they have borrowed money and are carrying out their sewerage works as a sewer and local authority under the Sanitary and Sewage Acts.

1211. Was not the health of that district in a very bad state during the whole of the time that they were discussing the adoption of the Local Government Act?—It is alleged to have been so, and I adopted that view in my report to the Secretary of State, and the ratepayers of Ulverstone were very indignant with me for doing so; they considered that it was very healthy. I have no knowledge personally of the mortality.

1212. Have you considered at all what you would make the governing body of a country parish or township, in place of the vestry, and would you propose to put the whole governing power of the parish or township in that body?—I would have them do what a district does now under the Local Government Act. There might be an election, preserving the name, if you like for distinction, of a district committee, elected for a definite period, with a rotation of retiring members, and a qualification for each member proposed, in fact the same provisions as there are under the Local Government Act for the election of local boards.

1213. Would not it be better to give that body the control of the roads in that particular parish or township?—There is this difficulty; my experience in country districts is everywhere the same, that the farmers as a body are opposed to all sanitary measures, and the one thing with which they concern themselves is the state of the roads, and if you get a committee with a certain amount of representation of the farmers interested in the district in which the works are to be done, you will find them always opposed to the construction of works, and only troubling themselves with the maintenance of the roads and keeping them up at the lowest possible expense. I would rather suggest that the road jurisdiction should not come under the committee.

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1214. Then you would still have two different bodies in the same parish; you would have the surveyor of highways actually controlling the roads, and you would have another body controlling the sewers, the water supply, and the works?—Yes; not from any wish to see two bodies, but from my experience of what very bad sanitary reformers farmers are.

1215. Would not it be more likely that the body that you propose to elect to carry out the sanitary powers of the parish being men of higher standing, would be likely to pay greater attention to the roads than the farmers would?—I am assuming that in a greater number of cases the committee would have formed or have had formed for them by the central authority a small district cut out of a large country parish, such a committee would have no right of jurisdiction over the roads in the rest of the parish, and that is constantly happening.

1216. With respect to the intermediate authority which you have mentioned, do you mean by that authority a county area or some less area?—I think the county may be taken as the unit, but as counties vary in size and in population there should be the power of subdividing, or in some cases of combining counties, but I take the county as an existing division, as nearly all our other territorial divisions are formed with reference to the boundaries of counties.

1217. (*Lieut.-Col. Ewart.*) If you had such an authority as you have just mentioned, would you vest in that authority the decision as to borrowing powers, which is now exercised by the central office?—No; I propose that the powers now exercised by the central authority should still remain.

1218. Would you propose any system for the inspection of the works which are done with borrowed money, either when they are in progress or when they are completed?—A very large number of the works done under the powers of the Local Government Act when completed are covered up, and I do not think it desirable in any case that the central authority should take the responsibility of these works. I think it is much better left with the district itself. The district should apply to the central authority for sanction to borrow, but the responsibility of execution should rest with the district itself.

1219. If you had an intermediate authority, would you give them any powers of inspection?—If the district chose to ask for them; I have not considered that case but I think it is better as a rule to let people be responsible for the outlay of their own money.

1220. Has it come under your observation that a great deal of bad or useless work has been done for want of proper direction in towns?—No, I have not had any cases of that kind brought under my own notice, there may be such, but they have not been brought under my notice.

1221. Do not you think it very important that the control of waterworks should be vested in the same authority that has the control of sewer works?—Yes, I think I mentioned that the intermediate authority should certainly have the control of waterworks, and it was an omission on my part if I did not specify waterworks.

1222. At present there is no power unless they agree upon both sides for two places to combine for local purposes, what is your opinion upon that?—I think it is most essential, in the present state of things, that there should be the power of compelling unions of districts. There is a permissive power, but it is a dead letter at present, because it is only permissive, there should be the power of compulsory union, and it could be very simply done under the present provisional order system by allowing any one or more districts to petition the Secretary of State to form a union of districts upon inquiry, all the other districts having been served with notices, and then that provisional order would go to Parliament and if necessary there would be an appeal to a committee of the House of Commons against the provisions of the order.

1223. (*Dr. Acland.*) You mentioned instances of cases where you found bad water supply and other sanitary evils: how did those places come to your knowledge, speaking more particularly of rural districts?—Generally I think by complaint under the 49th section, but the complaint had not always been of the water. Since the Rivers Pollution Commission was formed we have been allowed to send samples of water whenever we think necessary to the laboratory for analysis, and in that way the office has been able to have the services, in the first instance, of Professor Way, and subsequently of Professor Frankland, to give us the results of their analyses, and that has been found of the very greatest use.

1224. You have stated, and it has been stated by others, that the Act gives powers, but the powers are not called into operation by the public bodies; you have however been called to inspect by individuals, have you not, under the 49th section?—A complaint is alleged against the local authority of default and an inspector is sent down, when he is once there, he may inquire, as I have generally assumed power to inquire, into more matters than the particular complaint upon which he is sent down and in that way we have got information about the well waters.

1225. We have had evidence as to the action of the Privy Council in this matter, is it more proper to send to the Local Government Act Office or to the Medical Officer of the Privy Council for such inspection?—I must stand up for my own department. It must be a matter of opinion. I am hardly competent to answer.

1226. Which has the greater power of executing?—The power is with us certainly, because we have power under the compulsory sections of the Sanitary Acts.

1227. Is it not so that the Privy Council may nevertheless send an inspector also and do send him?—They do send inspectors.

1228. That is for necessarily sanitary purposes but not with regard to the Sanitary Act?—In two cases I have been associated with the medical inspector of the Medical Department of the Privy Council, once at Terling, where the Secretary of State's powers were called for by the Medical Department itself, and in another case in the north of England, a village called Cockfield near Barnard Castle. In both those cases the medical inspector rather dealt with the nuisance authority than with the local authority.

1229. You must have certainly been in contact with the guardians as *de facto* a sanitary authority, and it must have struck you that in every rural district throughout the country there is at this moment a Government medical officer, that is to say, the Union medical officer?—Yes.

1230. Do not you find that by that system you may practically obtain much of the information that you want as to the health of the district?—I suppose it could be got from them. I do not know that it is so.

1231. Could not the Commission at this moment without applying at your office or to the Privy Council get information by return of post as to the sanitary condition of any village in the kingdom through the Poor Law Board from the existing Union medical officers?—No doubt theoretically they ought to be in possession of that information, but in wide lying rural districts I doubt whether they would have that information without they were specially told to get it.

1232. I think your previous answers would imply that the way to meet that difficulty would be to combine several parishes into large districts under skilled supervision?—From what I have seen I do not think that the board of guardians in a rural district makes a very good nuisance authority. Guardians as a general rule do not recognize the enforcement of the Nuisances Removal Acts as one of their functions; they think they are elected for the purpose of poor relief, and not for maintaining or looking after the health of the district.

1233. But yet practically under some Acts they have certain powers of that kind, have they not?—Yes; they have the powers, but they do not exercise them.

1234. Could you make them exercise them by the system of well ordered central inspection, or would you have the inspection carried on by a county or district authority?—That inspection would be through the district authority, and not through the guardians at all.

1235. You mentioned that there were reports on these subjects sent in regularly to the Poor Law Board; is that the case to any extent?—I do not think I said so. It was on the subject of the auditor checking the accounts of local boards, that I said I believed there was a system of that kind under the Poor Law Board.

1236. You do not know whether in any other respects they have reports except from their inspectors when they send them down?—I do not know whether they have or not; I am not informed on that point.

1237. (*Mr. Bircham.*) Do I understand that you would continue in the rural district the parish as a unit?—I would continue the parish, allowing a special drainage district to be formed out of it, if necessary, but the formation of such special drainage district to be first approved by the Secretary of State.

1238. But by whom would you suggest that it should be initiated?—By a requisition of a small number of ratepayers, say in places under 500 population on the requisition of five ratepayers, and above 500 ten, and so on; that they should call upon the churchwarden to summon a public meeting for the purpose of putting the Act in operation, and appointing a committee for the purpose, by a regular election by voting papers.

1239. Do you think it would be a bad arrangement that parishes should be grouped into unions forming together a population of from 12,000 to 20,000?—I am afraid it would be difficult to get anything like common feeling in parishes so grouped for the purposes of local government.

1240. Have we not the same sort of result brought about in the case of the Poor Law?—Yes; the country is familiar with that, but I am afraid it would resent any such union for sanitary improvements.

1241. There was a time when the country was not familiar with that principle in connexion with the Poor Law?—Just so; and I have been rather considering what would work well at once.

1242. If you leave small parishes to conduct their own health affairs separately, would you be able to find the proper officers within the parish?—They must find them themselves. My proposed district authority would see that smaller places were getting to work and putting the Act in operation.

1243. Then you would by that system create a clerk or secretary, and a health and possibly other officers, and in every parish taking interest in such matters?—No, I do not assume that at all; I believe, as a rule, a village wants four things: a wholesome supply of water; a system of sewerage and house drainage, so as to get away house slops and refuse; decent and sufficient privy accommodation; and the systematic removal of offensive refuse from the neighbourhood of houses.

1244. Agreeing with you as to what may be wanted as a result, I am looking more to the machinery by which that result is to be effected, and the difficulty of effecting this if each parish acts by itself?—I would give power where convenient for parishes to form unions under certain circumstances for common objects.

1245. At present there is the power of union, but it must be initiated by every parish seeking to come into the union joining in the application to the Secretary of State for forming it?—Yes; and it is a union confined to one thing, namely, sewage outfall; it is for no other purposes.

1246. As far as the Act gives you any example of it at present, it must be initiated by the consent of every authority proposed to come into the union?—Yes, the Act was passed in 1867, and there have been two cases, I think, as yet in which those permissive powers have been put in force—one at Falmouth, where the borough of Falmouth and the district of the local board are mixed up together, the borough occupying a certain portion of the town and the local board having the remainder of the parish, or about two-thirds of the town, the remaining one-third being in a distinct parish which would not combine, the other example is that a union of districts at Brackley, in Northamptonshire.

1247. Have you at all considered whether there might not be a compulsory formation of districts throughout the country for purposes of roads, and nuisance and health somewhat of the size of poor law unions?—If you could get such carried out it would be very desirable.

1248. Can you tell me what was the history of the 49th section of the Sanitary Act of 1866; why it came to be added to the code?—No, I do not know that; I do not know anything about the circumstances under which that Act was passed.

1249. Am I right in assuming that previous to the enactment of that 49th section of the Act of 1866, there was no authority in the Secretary of State or any outside authority to compel the execution of works?—Previous to that Act there was none.

1250. Neither in towns nor in the country?—No.

1251. Have you had experience of the difficulty arising, because the sewer authorities have no sufficient power over the roads in districts in case they desire to make sewers?—Yes, I have had instances of that kind, but I think more frequent instances of the evil arising from the existing sewers not being vested in the local authority.

1252. That is probably an oversight in the Act?—Yes.

1253. It appears, does it not, that the sewer authority has the power now of putting sewers into public roads?—Yes, it has the same powers as a local board.

1254. Therefore the difficulty is, that the roads and sewers are in different hands, the roads being in the hands of the surveyor and the sewer authority having the authority for making the sewers.—Yes.

1255. Have you had any experience of cases where it has been desirable to get rid of water by drains as distinguished from sewers in any rural district for the purposes of health?—No, I have not had any instance of that kind; nor would it come before us I think, that is why I say that land drainage ought to come under the district board.

1256. Has it come under your observation that at present every owner has a compulsory right of joining, for sewage purposes, any sewer formed by the sewer authority?—Yes, he has the right, I believe, under the Act of 1867.

1257. And therefore, with their present powers, the sewer authority has no power of making a drain for pure water purposes and preserving it from invasion by the owners adjoining it putting their sewage into it?—I suppose if they made a sewer in the ordinary sense of the word an owner might put his sewage into it.

1258. They have no power to make a water drain as distinct from a sewage drain?—No, not a pure water drain.

1259. Do you think it would be desirable that individuals should in any case on the approval of some central authority acquire a compulsory right of outfall for sewage purposes?—I think it better that any such right should only be conferred on the local authority or the sewer authority.

1260. The power to prevent overcrowding in rural districts is very necessary, is it not?—Yes, it is very much wanted.

1261. And it is very limited at present?—Very limited. I should not think such a thing was ever enforced.

1262. There is only authority in one of the Nuisance Acts?—Yes, there is the power in the Sanitary Act of 1867, but I should think it is never used.

1263. Have you had any experience of mischief to health arising from houses being erected and

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inhabited before they are fit, because they may be unfitted for habitation?—No, I have not had any special instances of that kind before me. I may say as a rule, that in any of my inspections I always, as far as possible, keep clear of what may be considered medical questions, the causes of disease, and so on.

1264. In the case of water supply you cannot compel owners or occupiers to provide themselves with water in a rural district?—No; and that appears to be the object of Mr. Biddulph's bill.

1265. Do you think that in any sanitary code it would be desirable that jurisdiction for enforcing the provision of a proper water supply in the case of unwholesome water or no water at all should be extended to rural districts?—I would give the same power for small districts as for local board districts; it is just as much needed.

1266. You said something about the improvement of audit in the case of expenditure by sewer authorities; there is no statutory provision for audit at all, is there?—I say that I would have them put under an audit, the same as local boards.

1267. (*Mr. Richards.*) Do I understand you to say that you think it would be desirable to have a code applicable to rural districts, and a code applicable to town districts, enacted by statute?—Yes; I would make the Sanitary Act different to the Local Government Act, for instance.

1268. You would, in fact, have two enactments—one applicable to rural districts, and another to town districts?—Yes.

1269. Where would you draw the line—by population, or in what manner?—There would be great difficulty, for the reason I have stated, that if you took the population of the parish it would often be no guide to the population of the town. You might have a parish with 15,000 people, and no town in it of more than 5,000, or perhaps less.

1270. How would you define a rural district?—It is very difficult, I say, to define it.

1271. You are familiar, by holding inquiries, with Mountain Ash?—Yes.

1272. There would be great difficulty, would there not, in defining rural districts and town districts in a case of that description?—Yes, there would be difficulty.

1273. Do you think that it would be practically possible for an inspector upon inquiry to define what should be a rural district and what should be a town district?—I think it might be pretty well arrived at by local inquiry. If such were made a subject of local inquiry I think it might be defined, but I have not contemplated that as one of the subjects of local inquiry.

1274. Assuming that the statutes were codified, do you think that it would be possible by local inquiry for the inspector to make certain recommendations as to what portions of the Act should be enforced, and that a provisional order should then define what clauses of the Act should come into operation?—I think I would make the Act of general application; the Local Government Act to large places and the Sanitary Act to small places.

1275. I think you heard Mr. Norris's evidence on Friday. Do you agree with Mr. Norris that the provisions usually contained in byelaws could usefully be made direct enactments?—I do. I speak now of some of the leading byelaws.

1276. Would you make any byelaws direct enactments for rural districts applicable to the drainage of houses, and to the necessity for plans being sanctioned by a board previous to building?—I think it would be very desirable even in rural districts, if the builder were required to produce plans to some authority before he was allowed to build any house, and to show that there was provision for drainage.

1277. Would that embrace the question of water supply?—Yes.

1278. In answer to a question of Mr. Hibbert, I understood you to say that you would give an inspector the power to report upon the union of districts. Assuming that two parishes refuse to join together and the Secretary of State's order is not made compulsory, how would you carry out the works for that district?—There my intermediate authority would come in.

1279. Suppose the intermediate authority were the county area, and that that one parish was out of the county?—I consider that small district boards directly appointed and doing nothing else would be always acting tolerably in common, and this would not be the case with an elective board.

1280. Does not your last answer rather preclude the possibility of a county board being effectual, the area of counties not exactly covering what may be necessary?—No, if the proposed union overran the county boundary, the two authorities would have to settle where to compel the common action.

1281. And your opinion is that your district authority should not be in all cases conterminous with the county authority?—No, I would take the county as the unit, and you might in very small counties have more than one county in a district, and in very large counties you would want subdivisions. Take for instance Lancashire and Yorkshire, and compare them with small rural counties. Large counties would want subdividing, and small ones might want grouping.

1282. You would not draw a hard and fast line, so to speak, and say that it should be a county authority?—Not at all. I assume a county or unions of counties or subdivisions of counties according to the circumstances of each.

1283. Would you give that authority power to construct works in default of the parishes or the units not doing their duty?—I would give them compulsory powers to carry out works.

1284. And to raise money?—Yes; I think they might do efficiently all that the Secretary of State is now required to do under the Act, and which he cannot do.

1285. Why cannot he do it?—Because it is too much to ask one central authority to be taking upon himself the duties of rate collector, and engineer, and contractor, and all the rest of it.

1286. Do you think that if facilities for obtaining money to carry out works were increased local authorities would be very much more willing to do what is necessary?—I think it would be the greatest assistance. I know at the present time that the small local authorities are very much hampered by the difficulty of borrowing money for their works, and if there were any government department which would lend money at a given rate of interest upon the security of the rates it would be a very material assistance in getting works done.

1287. Do you think that provisions somewhat analogous to those given to the manufacturing districts would be applicable?—Something of that sort, I think, would be very desirable.

1288. (*Mr. Powell.*) In answer to I think two members of this Commission you stated that you would supersede byelaws on what you describe as leading subjects by a code forming part of a statute, do you recommend that there should be still certain byelaws, or would you leave each case to be dealt with on its own merits by the local authorities upon a point which you would not include in your definition of a leading subject?—I propose that they should settle their own byelaws for minor matters.

1289. So that then the matter comes to this, that you would narrow the scope of the present byelaws and increase the scope of permanent legislation?—Yes.

1290. You made some remark respecting carving a district out of a parish; did you, when you made that remark, have in mind some dense population within a large district, such as the population that might cluster around a mill or an extensive mining undertaking, or what had you in mind when you made that observation?—I was speaking generally of what is done in the large majority of cases, if the Sanitary Act is put in force at all, it is applied to a village

in a parish; very often, in fact generally, the parish has an area much larger than that to which there is any necessity for applying the Sanitary Act because it is rural in its character.

1291. Your answer would cover the case which is somewhat frequent in Yorkshire where you have a large parish or a large township and some part of the parish or township may be even on a moor, but another portion of it may be the seat of an active industry and of a dense population?—Yes. I may add here that the carving out of special drainage districts is carried on to a very mischievous extent, I think. I may give an instance of a place close to us. The parish of Merton immediately to the south of Wimbledon on the South-western line, which is a very small parish, has made itself into two special drainage districts, each with its committee. I do not know what works they have done, or if they have done any, but there can be no earthly reason why Merton should have two local authorities within it, though we have no power to prevent it.

1292. Do you not think that if you laid the whole of the financial burthen upon the localities you would increase that resistance which certainly now exists to the action of a central authority?—It would fall very light.

1293. You have some acquaintance with Chichester, have you not?—I have.

1294. I have before me the report of the finance and general purposes committee presented to the town council, and which on the 29th of April was adopted by the town council with one dissentient voice. That I think has been sent to the Local Government Act Office as the official answer of the Chichester town council to you as a Government office?—I read it this morning, and after reading it I expressed a hope that it might be put in and laid before the Commission, together with the reports which are alluded to throughout it, namely, Dr. Seaton's and my own.

1295. I find it stated in the report to which I have made reference, that the city is so clean a city that no complaint exists; they deny that the sanitary condition is bad, they state that immense efforts have been made and are being made towards sanitary improvements, and then they go on to say, "Instead of receiving encouragement and assistance from the officials of the Imperial Government, they are continually hampered and annoyed by unnecessary and trouble-some interference." It being therefore evident from this report that there is some collision between the Local Government Office and the authorities at Chichester, could you very briefly give the Commission some facts respecting that community, and the condition of affairs there?—The first interference with Chichester was by the medical department of the Privy Council, who sent down Dr. Seaton, and he made a report which is alluded to in that memorial. The corporation called for plans of water supply and sewerage from Mr. Lawson, the civil engineer, and did nothing more. In October 1866 there was a very influential memorial from the city of Chichester, complaining under the 49th section of the Sanitary Act, which had been passed in the August previous, of default by the town council of Chichester in carrying out proper sewerage and water supply. I held an inquiry under that complaint and made a report upon it. At that time the corporation seemed disposed to do something, but having got an Act of Parliament to remove the cattle market from the streets and form a new market, they have done nothing more except call upon Mr. Hawksley, the engineer, to give them a report upon the water supply and sewerage. Mr. Hawksley reported in favour of a water supply, but recommended them to pause in carrying out any system of sewerage. Within the last two or three months the medical department of the Privy Council, having again called the attention of the Secretary of State to the fact that nothing is being done, the latter addressed a letter to the town council, and the memorial to which you allude is the answer to his last letter of remonstrance.

1296. In that report they deny that the sanitary condition is bad; is it not true that they have cesspools and wells from which the people drink in very close contiguity in very many cases, and the strata are porous?—Yes.

1297. Have you not reason to suppose that, owing to the conditions which I have just described, the water in those wells is in a state which is most pestilential?—I think there is every reason to believe so.

1298. Have you not from what occurred when you were at Chichester reason to suppose that considerable pressure is being put upon certain inhabitants in order to prevent them making complaints and exposing the real condition of affairs?—I think that is very likely.

1299. In this town, which is stated by the local authorities not to be in a bad sanitary condition, is there not held a market every alternate Wednesday in the public streets, the number of animals often amounting to 10,000, and on one market day to more than 15,000?—Such is the case, but they are now building a new market outside the town.

1300. You may judge, may you not, of the state of public feeling in that locality upon sanitary matters by the fact that while this market still continues they deny that the sanitary condition is bad?—Yes, just so.

1301. Are you intending to apply the 49th section of the Sanitary Act of 1866 to Chichester?—I cannot say. I consider that it is a case for compulsory interference.

1302. And they have at present no source of water for drinking except the wells which have been alluded to?—No, and no sewerage whatever; they have nothing but cesspools.

1303. (*Mr. Shaw.*) By the Nuisance Removal Act, 1855, in rural districts there was a power to the vestry to appoint a special committee to be charged with the duties of executing that Act; would not that power approach to a considerable extent what you suggest as to the local authority?—Yes, as to nuisances, but I have found a reluctance on the part of the guardians to put the 5th section of the Act of 1860 in force.

1304. Therefore you consider the Act of 1860 which abolished that power of the vestry and gave it to the guardians a retrograde step in legislation?—Yes.

1305. Under the former Act the vestry which would comprise all the ratepayers in a country parish had power to appoint a special committee charged with duties under the Act; you mean that you consider that a better plan than what is adopted under the Act of 1860, transferring that power to the guardians?—Yes, when you have got the ratepayers to form a committee, because that is essential, as long as you have the power in the whole body you can do nothing with it.

1306. That is, you consider the Act of 1860 a back ward move in giving it to the guardians?—Yes.

1307. You were speaking of poisonous water in connexion with Cinderford and other places; there is no legal power now, is there, to close any pump or poisonous source of water and forbid persons using it for drinking purposes?—I believe not.

1308. Would you not consider that such power should exist in some sanitary body?—Yes, it is most essential. I have an instance of the kind at this moment before me.

1309. I think you mentioned that, under the 49th section, you thought that the power of complaint ought to be vested in one-tenth of the ratepayers instead of one?—Yes, I think the present power is too general.

1310. In a rural parish do not you think that you would find very considerable difficulty in getting a complaint at all?—I would give either to numbers or to rateable value the power of complaint to the Secretary of State, and one-tenth of the rateable value is very easily acquired. I have taken the same proportion as in the Local Government Act, under which one-tenth puts the Act in operation in certain cases.

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1311. Does not the Local Government Act usually exist in places where there is more combination than generally is to be found in rural districts, and more facilities of getting people to act together?—Yes; but I think it is essential that there should be some amount of local support in every case of complaint.

1312. You are not obliged to proceed upon a complaint when you get it, are you?—No; but I do not remember an instance in which we have refused an inquiry when there was a complaint; and I certainly have inquired into several where I think complaints need not have been made.

1313. In the intermediate board of which you spoke, you would have some medical authority in connexion with the board, would you not?—I assume so, because medical questions would be dealt with.

1314. And he would be appointed and removed by the Secretary of State as the rest of the paid officers of the board?—Yes, that would be indispensable to Government appointment and control.

1315. I think you said that the intermediate board should have power to carry out works?—Yes, in the case of refusal by the local authority.

1316. Why I ask the question is, because I think that we have had a very strong opinion from Mr. Rawlinson that it was undesirable that that board should carry out works, that what should be done should be to compel the local authority to do its duty, but that any other board stepping in would incur very great responsibility. I presume that is not your opinion?—Mr. Rawlinson and myself do not agree upon that point, we have had a good many discussions about it.

1317. Would you have that intermediate board to act simply as a court of appeal, or to act *proprio motu* where the local board did not do its duty?—I would give a power of appeal by the local authority from the decision of the intermediate authority to the central authority.

1318. Would you have the intermediate authority interpose of its own accord on its own motion, or only when there was some appeal against the decision of the local board to it?—I would give them the power of moving themselves, acting on their own responsibility and on their own authority.

1319. (*Mr. Cave.*) Do you think that in every rural parish you would have that independent action of ratepayers which would put the churchwardens or overseers in motion?—The churchwardens or overseers should be put in motion on the requisition of a small body of ratepayers.

1320. Do not you think that in some rural parishes you would not be able to get even that independent action of the ratepayers?—Then my intermediate authority would be useful.

1321. What would be the composition of that intermediate authority? what sort of persons would be upon the board?—I think you want a medical man, and you want someone conversant with engineering works and works of that character, and you want a man with a good head for business, for money matters, and the details of business generally; that is the sort of composition of the board that has occurred to my mind.

1322. Do not you think that such a board as that would excite very great opposition amongst people accustomed to guardians and justices, and not accustomed to such a board as that?—I do not see why it need excite so much opposition. I assume that they would use their power with discretion, and not be unduly harsh; that they would persuade and induce, as well as compel.

1323. Have you weighed that point in your own mind?—I am quite aware that public opinion would be against my idea of creating bodies of paid Government officials, but I have come to the conclusion in my own mind, because I cannot see my way to a satisfactory board elected by a local constituency.

1324. Do you think it would be possible to get over the repugnance which would be felt in the first instance to such a board?—I think so; I hope so, at least.

1325. Is it not the case with regard to districts under the Sanitary Act that they are framed in a most capricious manner?—Most capriciously.

1326. Sometimes for the purpose of avoiding opposition a piece is left out which ought to be in, for instance?—Yes.

1327. Therefore it is quite your opinion that some independent authority should have the formation of those districts?—Yes, there is a modified appeal to the Secretary of State now in cases in which a district is objected to by a certain number of ratepayers; they can appeal and ask for a modification of the boundaries, but I would make it compulsory in every case.

1328. Is not that appeal in cases where they are included, but not in those where they are left out?—They must be within, otherwise they have no right of appeal.

1329. Then it does not touch the mischief of leaving out a piece which ought to be in?—No.

1330. You stated, did you not, that the expense of making the Local Government Act Office self-supporting would be so small that it would not be likely to deter any locality from adopting the Act?—I do not think it would.

1331. With regard to byelaws the model code which you have prepared in the Home Office cannot be adopted by any locality without an Act of Parliament, can it?—It does not need that; the proposed byelaws are deposited in the district at the office of the local board; public notice is given that they are subject to inspection for so long, they are then submitted to the Secretary of State for his approval, they are signed by him if approved and then passed.

1332. Is it not necessary that they should previously have an Act of Parliament enabling them to pass those byelaws?—No, they do it under their powers as a local board, under the 34th section of the Act of 1858.

1333. I understood Mr. Norris the other day to state that an Act of Parliament was necessary for that, for he says, "We can only make byelaws under "the provisions of an Act of Parliament. If we "want any new provisions we are obliged to go to "Parliament for a special Act?"—He must have been alluding to the byelaws which they themselves have embodied in their own Improvement Act.

1334. In answer to this question of mine, "If you want fresh powers to make other byelaws, your plan now is to proceed by a provisional order, is it not?" Mr. Norris said, "No." I then asked him, "Must you then have a fresh local Act?" to which he replied, "We can only make byelaws under the provisions of "an Act of Parliament, and if we want any new "provisions we are obliged to go to Parliament for a "special Act." Do you imagine that that simply refers to Halifax as being under a special Act?—Yes, to their own Improvement Act, because as a local board they have had their byelaws approved by the Secretary of State in the way I have described.

1335. (*Lord R. Montagu.*) You spoke of the inconvenience which arises from Crown property not being rated. Did you ever meet of any cases of inconvenience from not being able to carry out waterworks or sewage works through and over Crown property?—No, I have not met with any instance of that, but no doubt there would be difficulty in such cases.

1336. I believe that you cannot carry any sewage works, or waterworks, over Crown property without getting the leave of the Office of Woods?—No, I presume not.

1337. You cannot tell me of any inconvenience which has arisen from the difficulty in getting permission?—No, I cannot. The only instance of Crown rights is the one I have alluded to, namely, East Dean, where these rights affect the general condition of the town, which is chiefly due to the operation of those Crown exemptions.

1338. Would it be advisable to bring the Crown property under the general laws in that respect?—

I think that it ought to pay the same as all other property.

1339. Would you take power to carry waterworks and sewage works through Crown property just the same as you would through any body else's property?—I do not see why you should not.

1340. There is still a difficulty, is there not, with regard to foreshores?—I do not know anything with regard to the question of foreshores.

1341. When you spoke of doing away with the vestry, you merely allude to the initiative in putting the Acts into operation, but you would still retain the same body to act, namely, the ratepayers, would you not?—Certainly.

1342. The ratepayers are not a very good body to carry out the Sanitary Acts, are they?—When they have elected a committee the latter are the proper body to carry them out.

1343. Did you ever consider the question of the advantage of double election to form a body to carry out those Acts; that is to say, the guardians of the union are elected in the first place, and if the guardians of the union were to elect the body to carry out those works, would you not get much better men than if you merely took the ratepayers of the parishes?—I would rather leave it to each locality to form its own committee.

1344. The metropolitan board is elected by a double election, is it not?—Yes, but I do not know its constitution exactly.

1345. You spoke of the union of districts by means of a provisional order; will you explain the precise object that you have in view by the proposal of a union of districts; what would you attain by it?—I first take the question of main sewerage, and the difficulty there is now in getting a system of main sewerage carried out in a district, because in the course of carrying out that system of main sewerage you invade another district, and it may be a third; what is wanted is the power to carry on the outfall sewer to some point where you could deal with the sewage without doing mischief to the adjoining districts.

1346. Would not that objection rather point against the provisional order system, upon a requisition by five or six ratepayers such as you have just recommended. Do not you think that the union of districts ought to be compulsory?—Yes; the union of districts should be compulsory upon a petition to the Secretary of State. No provisional order can be granted by the Secretary of State except upon a petition from the district.

1347. What I mean is this,—why should you wait for a petition; would not it be better to impose it upon those boards, supposing they did not petition?—That is one of the many functions that I would give the mediative authority.

1348. That the intermediate body should be able to petition?—Yes; they might petition.

1349. To prevent, we will say, the water at Kingston being polluted with the sewage of Oxford, to take an example?—That is rather an extreme example, because you are going very far away from Kingston when you are at Oxford.

1350. I am aware that it is an extreme example, but it is with such an object that you would propose a union of districts?—Yes.

1351. We might extend those examples step by step up the whole river so as to take in the whole watershed; would it be too much to say that the whole district within the watershed should be united under the government of the intermediate body?—In very many cases this compulsory union would take the watershed.

1352. Instead of its being united in some or even in many cases, would not it be better to do so at once in every case?—You are taking me to the subject of main sewerage at present.

1353. I will take you then to other subjects. With regard to arterial drainage, do not you think that the same remark equally applies, namely, that the towns up the river would desire that the towns below should carry out arterial drainage, and deepen the bed of the river in order that those above might not be subject to floods?—Yes.

1354. Then equally in the case of arterial drainage, just as it is in the case of sewage, we ought to take the whole river basin as one area, and not a portion only as it would seem, otherwise those below will not incur the expense of arterial drainage for the benefit of those above; and those above will not spend large sums to divert their sewage for the benefit of those below?—But you get in some cases such enormous areas that I am afraid that they would be too large to be manageable.

1355. Then the only objection is the size of the area, is it not?—Yes, and that you are creating a new division with which no one as yet is familiar.

1356. Are you aware that the Thames Conservancy Act has taken the Thames basin and put it under the conservancy board?—I believe the main stream, not all the tributaries of the Thames; the Conservancy only goes three miles from the river. In the case of the River Lee, the conservancy board embraces the contributaries of the Lee, which is a very important difference.

1357. In the case of the Thames, the committee on the bill in 1866 recommended that the whole of the Thames and all the tributaries should be comprised in the jurisdiction of one conservancy board, did they not?—I do not know that. I only know the jurisdiction of the present conservancy board. (*See Appendix*, p. viii.)

1358. Its area is the largest watershed area of all, is it not?—I suppose it would be. I do not know if that of the Severn be larger.

1359. It is very nearly, is it not, 4,000 square miles?—I cannot say, but I daresay that is correct.

1360. This intermediate body (which you propose, I believe, with the same object as Mr. Tom Taylor, to act as a buffer between the local authorities and the Secretary of State,) you suggest should consist of three paid Government officials, do you not?—I said a small board of three or five, my notion is that a small number of men would work best.

1361. Would such a board as that act as a buffer between the local authorities and the guardians?—I think so.

1362. Would not some collision necessarily arise between the body itself, which is appointed and paid by the Secretary of State, and the local authorities?—Not necessarily; in the locality itself they would be able to deal with these cases much more efficiently. They might come into collision, no doubt, but that is the purpose for which buffers exist.

1363. Would there not be less collision, if, instead of having three paid officials appointed by the Government, you were to have a board elected by the different local boards within the river basin or watershed area, giving us at once that double election which I just now spoke of?—A local board so elected would merely be a reflection of the apathy and indifference and ignorance which I wish to overcome.

1364. You do not think that a double election would strain out the apathetic persons?—I doubt it.

1365. With regard to the county quarter sessions, you propose that it should undertake sanitary works, not because it is the best authority for doing so, but because it is the existing authority, or one which is as yet familiar?—The county, as the area of the district authority.

1366. The present duty of the county quarter sessions are totally different from the duties you recommend, are they not; namely, the administration of criminal law, the gaols, the police, bridges, coroners, and so forth?—Yes.

1367. The functions of the two are not similar at all?—Not at all.

1368. Would not it be better for sanitary objects rather to extend the area of the operation of those county functions than to give the county these sanitary works in addition?—I do not think that the

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enforcement of sanitary laws is a duty that you have a right to put upon quarter sessions.

1369. Did not you propose that when you talked of the county taking up the matter?—No; I only proposed that the district board should be responsible for its expenditure to the county financial board, if it is established, or to the central authority.

1370. But not that the county should carry out sanitary works?—No.

1371. You say that in your inspection you keep clear of questions of the origin of diseases?—Yes; as much as I can, because I am not a medical man.

1372. Then the duties of the Privy Council inspector and those of the local government inspector are quite different?—They are different.

1373. Then, supposing we had one central authority to administer the sanitary laws, would you still have two different sets of inspectors, or would you have one set of inspectors to do both duties?—I think that in many cases inquiries might be conducted independently by one or the other; but certain cases would arise in which you would need a medical inspector, in some cases certainly; I do not say generally.

1374. You could not assimilate the duties, even although the officers were united?—I heard the evidence of the secretary of the office on that point, and I think that if the two functions were united in one office, you must have some medical inspectors.

1375. You are able to give the Commission the history of the Terling case; that place has no local authority, has it?—Yes; every place has a local authority, the vestry.

1376. It is not under the Local Government Act?—No.

1377. Now will you give us the history of that case?—The question that was put to the secretary about Terling seemed to imply that there was some considerable delay in getting the Act to work. As there was none, I begin by stating that the absence of delay is not due to any excellence of the Act, but to the fact that Lord Rayleigh was the resident proprietor there, and he was in earnest about having the place put to rights, and of course, the vestry obeyed his orders in the matter, or else I should have a very different tale to tell of the Terling vestry. It was an important case, because that village was the scene of a most frightful epidemic. In the proportion of the number of deaths to the number of the population, it was the worst epidemic, I believe, that has been known in modern times in England. On the 5th of February 1868, the medical department of the Privy Council wrote a letter to the Home Office, calling attention to the report of the medical inspector as to the condition of Terling. On the 10th of February I was sent down with Dr. Thorne, the medical inspector of the Privy Council to Witham, to meet the guardians of Witham union in which Terling village is situated. In the afternoon of the 10th I inspected the village with Dr. Thorne, and on the 12th by arrangement with Lord Rayleigh I met the Terling ratepayers. I explained to them their position and duty under the Sanitary Act, and obtained their consent to call a vestry meeting on the 20th, which was the earliest day, for the purpose of appointing a committee. On the 17th I sent in a preliminary report to the Secretary of State. On the 20th the vestry of Terling met and instructed Mr. Clark, a civil engineer, who attended by Lord Rayleigh's directions, to prepare plans for carrying out a combined system of sewerage and water supply for the village. On March the 20th the vestry appointed a committee, Lord Rayleigh and the Honourable Mr. Strutt being amongst the number. On the 26th Mr. Clark laid before the committee his plan, report, and estimates, the latter amounting to 1,720*l.* The same day the committee accepted his estimate, and on the 2nd of April I made my second report upon the above facts to the Secretary of State. On the 14th of April the committee applied for the Secretary of State's sanction to borrow 1,700*l.* for the above works, and on the 20th the sanction was recommended by me. Therefore from the first complaint to the Secretary of State by the medical department to the giving sanction to the plans and to the loan, there elapsed the period from the 5th of February to the 20th of April; but if there had been no Lord Rayleigh, or if Lord Rayleigh had been obstructive, I should have had a very different statement to make.

The witness withdrew.

S. A. Notcutt, Esq.

(7.) Stephen Abbott Notcutt, Esq., examined.

1378. (*Chairman.*) You are the town clerk of Ipswich and clerk to the local board, are you not?—I am; I have been town clerk more than 30 years.

1379. Has Ipswich adopted the Act?—It adopted the Public Health Act in 1857.

1380. In the year 1857 you adopted the powers given in the Act of 1848?—Yes.

1381. And the Act of 1858 became afterwards applicable to you?—Precisely.

1382. Do those Acts, in your opinion, repeat many similar provisions so that it would be an improvement to consolidate them?—I think it would be a great improvement to consolidate the Local Government Act and the Public Health Act with the other Acts which are already incorporated, such as the Towns and Police Clauses Acts and the Nuisances Removal Act. All those Acts contain similar provisions, and it is sometimes difficult to determine under which Act you will proceed.

1383. So that there is both repetition and confusion of legislation?—Repetition and confusion, because although they are similar they are not precisely alike.

1384. What is your local board?—The town council.

1385. Under what authority does your council meet for the purpose of action?—That is regulated by the general powers of the Municipal Corporation Act, the 5th & 6th of William the Fourth, chapter 76.

1386. Under that Act you elect a committee to put the law in force?—The town council is convened in accordance with the Municipal Corporation Act.

1387. I think under the 133rd section of the Public Health Act of 1848 proceedings for the recovery of any penalties can only be taken by the party aggrieved or by the local board. Can you suggest any better mode for facilitating such proceedings?—I think that a committee of the town council ought to have power to take those proceedings.

1388. Why do you think that section defective which only enables the party aggrieved or the local board to take proceedings?—Because the board can only act at a meeting of the town council convened under the provisions of the Municipal Corporation Act. In many cases, therefore, before we can take proceedings against a party to recover penalties, we must have a meeting of the council, which must be convened by three days notice served upon every member of the council. A committee of the council ought to have power to initiate proceedings. Under the Nuisances Removal Act a committee may be appointed, and that committee can have power as a committee to take proceedings, but that applies only to the provisions of the Nuisances Removal Act.

1389. By the Public Health Act, and the Local Government Act, where works are required for abating nuisances, and similar works, the local board has power to execute the works, and to recover the expenses from the owners; do you think that those powers are deficient?—I think that those provisions are extremely defective. I think that instead of the local board doing the work, and then recovering the amount expended of the parties, it would be far more efficacious if the provisions of the Highway Act, for instance, were followed, that is to say, if you were to

receive the amount from the parties before you expended it. When a highway is out of repair an application is to be made to the magistrates, and the magistrates are to call evidence before them, and they are to fix the sum to be paid by the parties whose duty it is to do the necessary repairs.

1390. How could you levy payment before you know what it amounts to?—The parties are, by the Local Government Act, liable to do the work, and the local board has to execute the work only in default of the parties doing it themselves. What I should propose would be this, that instead of the local board doing the work and then recovering the amount of the parties, the local board should have some means, through the magistrates, or in some other way, of ascertaining what amount is required, charging the parties with it, and after getting the amount to expend it in carrying out the work.

1391. You would in fact in the first place have to levy the sum upon an estimate?—Yes, as you do by the Highway Act. By the 94th section of the Highway Act, the 5th & 6th of William the Fourth, chapter 50, when a highway is out of repair, you have to go before the magistrates, give evidence of the amount required, and then to make the parties pay it, and the amount recovered is applied in repairing the highway. We have a case now pending at Ipswich where the parties having property on each side of a road, memorialized the local board to make up the road, and after doing the necessary works, to charge the owners with the expense. We had plans prepared, and the parties had notices served upon them to do the work, but they did not do it. We did not expect they would, and the local board ordered the work to be done, and we are now taking proceedings to recover the costs. The parties know that their property has actually been benefited by the work, and that we cannot undo it; but they are now fighting us before the magistrates, and disputing their liability.

1392. Have you found the powers in the Public Health Act defective as to the removal of nuisances?—Yes, I think we have.

1393. In what way, seeing that the 59th section of the Public Health Act of 1848 vests refuse in the local board, and directs them to sell and dispose of it?—There is no express power by that section to enter and remove it.

1394. The 59th section of the Act of 1848 provides that if at any time an accumulation of nuisance shall not, after notice, be removed, it shall vest in and be sold, or disposed of by the local board, and the proceeds thereof carried to the district fund account; in what point is that defective?—We should prefer that the sanitary inspector, or some officer of the local board, should have express power given to him of entering to remove a nuisance. It may be that the local board has power to enter, but it is not expressly given by the section. It is only said that the filth which is to be removed is to vest in the local board. You may, perhaps, go and get what belongs to you, but there would be difficulty in your officer doing it.

1395. Have you found your powers under that section deficient?—I do not know that I can name a case. We have generally found that upon notice the manure, or that which occasions the nuisance, has been removed. Where it has not been removed, I think we have rather flinched from directing the officers to go and seize it. The local board is the corporation, and they cannot act without a meeting of the council. It is not a *committee* of the local board, but the *local board* that has to do this. It is not said that the local board or any of their officers may enter and serve, but only that the local board may do it.

1396. In your opinion the law is defective, and not the local board in default?—Just so.

1397. In the 64th section of the same Act, which gives a list of offensive trades, do you think that the list is deficient?—We regret that brick-burning is not amongst them, and it has been held not to be so. In the case of the Wanstead Board of Health it was so decided.

1398. With regard to the 85th section of the same Act, which provides for contracts made by local boards, have you found that the restrictive conditions imposed by that section have been obstructive of the works?—Yes, I think they have. In many cases we should have contracted rather than do the work ourselves if those restrictions had not been in the Act.

1399. Do you think there is not sufficient security to the ratepayers?—I do not think that those provisions add any security to the ratepayers. Those provisions require that an estimate is to be made and advertisements inserted for contracts.

1400. What better security would you propose to the ratepayers?—I do not think that the ratepayers require any security. You have to enter into a contract, and there must be an estimate; but if you read that clause with reference to contracts you will see there are a number of rather peculiar provisions.

1401. With reference to security, the local board are instructed, are they not, by this section to require and take sufficient security for the due performance of the work?—Yes, and there can be no objection to their taking security.

1402. Will you explain a little more what you think defective in this 85th section?—The section says: "Every such contract whereof the value or "amount shall exceed 10*l.* shall be in writing, and "(in the case of a non-corporate district) sealed "with the seal of the local board by whom the same "is entered into, and signed by five or more members "thereof, and (in the case of a corporate district) "sealed with the common seal, and shall specify the "work, materials, matters, or things to be furnished, "had, or done, the price to be paid, and the time or "times within which the contract is to be performed; "and shall fix and specify some pecuniary penalty to "be paid in case the terms of the contract are not "duly performed; and every contract so entered into "and duly executed by the other parties thereto shall "be binding on the local board by whom the same is "executed, and their successors, and upon all other "parties thereto and their executors, administrators, "successors, or assigns, to all intents and purposes: "Provided always, that the said local board may com-"pound with any contractor or other person in respect "of any penalty incurred by reason of the non-"performance of any contract entered into as afore-"said, whether such penalty be mentioned in any "such contract, or in any bond or otherwise for such "sums of money or other recompense as to such local "board may seem proper: Provided also, that before "contracting for the execution of any works under the "provisions of this Act, the said local board shall obtain "from the surveyor an estimate in writing, as well of the "probable expense of executing the work in a substan-"tial manner, as of the annual expense of repairing "the same; also a report as to the most advantageous "mode of contracting, that is to say, whether by con-"tracting only for the execution of the work, or for "executing and also maintaining the same in repair "during a term of years or otherwise: provided also, "that before any contract of the value or amount of "100*l.* or upwards is entered into by the said local "board ten days public notice at the least shall be "given, expressing the nature and purpose thereof, "and inviting tenders for the execution of the same, "and the said local board shall require and take suf-"ficient security for the due performance of the "same." The previous estimate of the surveyor, specifying as to the best mode of doing the work, whether the contract should include not only the execution of the work, but also the reparation of it afterwards,—all that, I think had better be left to the local board to determine at the time.

1403. You would suggest an alteration to that effect?—I would.

1404. The 98th and 99th sections of the same Act refer to the making of a general or special district

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rate, do you consider those provisions unsatisfactory?—I do. The Act requires, as you will see, an estimate to be made, and that that estimate shall be deposited at the local board office a certain number of days prior to the day fixed for making the rate. It follows, therefore, that there must be two meetings,—You must have a meeting of the local board to approve of the estimate, and you must have another meeting of the local board seven days afterwards to make the rate. The usual mode of making a rate—the poor rate and all other rates—is to treat the estimate and the making of the rate as one transaction. We have found it inconvenient separating the proceedings in this way, and I can hardly conceive that there could be any use in it, because when you meet to make the rate you must make the rate exactly according to the estimate; you cannot vary it. You estimate that you want to raise so much; that estimate lies at the local board office for seven days, and then you are obliged to have another meeting to make the rate. That is not the way in which the poor rate, or the highway rate, or any other rate is made.

1405. Your proposition upon those sections is that the estimate and the rate should be one transaction?—Yes, one transaction.

1406. Have you any suggestion to make as to the publication of the rate?—The Act requires the rate to be published as the poor rate. A poor rate has to be published by a notice on the church doors before the morning service on the Sunday after the rate is made. Now there are 13 parishes in Ipswich, and we have to put this notice on the church doors of all those parishes. A publication, corresponding to the publication of a poor rate, would be to put a notice of the making of a general district rate on the door of the town hall or of the local board office.

1407. Do you think that too much is required to be printed in the notice itself?—There can be no use in it. There are 13 parishes in Ipswich to which the general district rate applies, and you have to publish the rate upon all the church doors, instead of publishing it upon the town hall door or the door of the local board office. The poor rate is made for a parish, and it is reasonable enough that the publication of that rate should be upon the door of the parish church, but the publication of the general district rate should be upon the town hall door or upon the door of the local board office.

1408. Is it stipulated in the Act of Parliament that the several purposes for which the rate is made must be set forth in the estimate?—Yes, and that I think is exceedingly inconvenient. In the estimate you must state the purposes for which the rate is made, and it has been held that those purposes must be stated with sufficient exactness, and that you must not combine one item of expenditure with another; and inasmuch as there must be some grouping, there is a difficulty in making the selection, and the rate is invalidated if you do not specify the purposes properly.

1409. Have you ever had a rate disputed owing to any informality in this respect?—Never; we have been particularly fortunate; but it has not been so in other places, and we have always feared it. The Worksop local board of health had a difficulty in this respect.

1410. The section providing for a rate provides that each of the premises throughout the district must be separately assessed, does it not?—Yes. I think it would be a great improvement if instead of having a general district rate assessed upon each property throughout the district, the rate might be made as the county rate is made, and as the borough rate is made, that is to say, to assess each parish in a lump sum, leaving the parish officers to raise it as they do the county rate and the borough rate, and pay it out of the poor rate. By that means we should get rid of the large expense of collectors, and all the losses for empties and those who do not pay. For 30 years we have collected the borough rate of Ipswich in that way, and we have never had any difficulty. It seems unreasonable that we should make and collect a rate for paving, &c. the town, in one way, and a rate for maintaining the police and the gaol, in another.

1411. In the 55th section of the Local Government Act there are certain exemptions from rating, are there not?—Yes, tithes, woodlands, market gardens, or nursery grounds are to be assessed at one-fourth only.

1412. Do you think it unfair that open spaces should pay less than building ground?—I think so. I do not see upon what principle they should be exempt; they are not exempt from other rates, and if they are not exempt from the poor rate, why they should be exempt from a rate for paving and lighting a town I cannot conceive. The wear and tear of the pavement by the owner of a market garden must be quite as much as that of a private resident, in fact a person who has a market garden wears out the pavement to a much greater extent than the occupier of a private residence, as he uses the town for the disposal of his produce.

1413. What suggestion have you to make as to bye-laws?—The byelaws, I think, are great difficulties as the law now stands. The 34th section of the Local Government Act enables the local board to make bye-laws upon a variety of subjects, and a model list of byelaws was issued by the Home Office, and byelaws have been made for Ipswich as well as other places upon that model; some of them have been held to be invalid, and the ground upon which their validity has been impeached applies, I think, to nearly all the bye-laws made upon that model.

1414. What is that principle?—Chiefly that they are *ultra vires*, that they attempt to give local boards more power than they are entitled to; for instance, the first byelaw "with respect to the level width and "construction of new streets, and the provisions for "the sewerage thereof" provides that "every new "street shall be laid out, and formed of such width "and at such level as the local board shall in each "case determine." All the byelaws are much in the same way, leaving it to the local board to determine in each case what shall be done. That is held to be beyond the power given by the Act. An Act of Parliament could give the local board power to have new streets made in such a way as they should in each case determine, but no byelaw can give such power.

1415. Can you give us a case of any decision against the validity of a byelaw?—Waite *v.* Garston Local Board of Health, 37 Law Journal, New Series, Magistrates' Cases, p. 19; Hattersley *v.* Burr, 14 Law Times, New Series, p. 565, (Exchequer); Burgess *v.* Peacock, 16 Common Bench, New Series, p. 624; and Young *v.* Edwards, 33 Law Journal, New Series, Magistrates' Cases, p. 227, were decisions against bye-laws. Upon the decision of those cases a suggestion came from the Home Office that we should alter the byelaw to which those cases applied.

1416. Were those decisions that certain byelaws were *ultra vires*?—Yes, particularly in the case of Young *v.* Edwards.

1417. But were the byelaws which were held to be *ultra vires* adopted from the model of the Home Office?—Yes, certainly; and an alteration was suggested by Mr. Taylor from the Home Office. A circular was sent in consequence of one of those decisions, and an alteration was made in the byelaw, but that alteration was afterwards held to be invalid. We have never made any alteration. I have no doubt that all the byelaws on the model of those issued by the Home Office, if they were contested, would be held to be bad as *ultra vires*, because to give the local board the power in each case, to say how this is to be done involves uncertainty, and is therefore contrary to the essential property of a byelaw. I would suggest that if the object to be attained by these byelaws be of general application, that is to say, if the byelaws are to be the same for every place, it is far better that the object should be attained by an Act, and not by a byelaw. A byelaw should be, if I may say so, a law applicable to a particular locality from some excep-

tional circumstances appertaining to the locality.—A general sanitary regulation applicable as well to Ipswich as to Norwich, or any other place, should be by positive and general enactment.

1418. Do you yourself think that the general scope of the byelaws under those Acts might be embodied in a general law?—Yes, certainly.

1419. But do you think that a general Act could be so framed as to prevent the necessity of making byelaws by any local authority?—No; I think that the local authorities ought to have power to make byelaws, just as the corporation has power, that is to say, to make byelaws applicable to the particular locality to meet some particular circumstance that may be in existence there, and not elsewhere.

1420. But you think, do you not, that much is dealt with by a byelaw now which might be dealt with by a general law?—Yes.

1421. What do you think defective in the provisions of the Towns Improvement Clauses Act, 1847, as to obstructions in streets?—The Towns Improvement Clauses Act contains sundry provisions for the removal of obstructions in the streets, but they are all preceded by the condition that those obstructions do not hinder the free passage of the public, so that as to signs and projections, if they are above the heads of the foot passengers, it does not seem that there is any power to remove them. In Ipswich it is now the fashion to put out certain sign boards, and we have a difficulty in removing them.

1422. Do you consider that the provisions on the same subject in the Towns Police Clauses Act 1847 are also defective?—I think so. There are a number of offences mentioned in the Towns Police Clauses Act which can be abated, provided the public are annoyed. The 28th section of the Towns Police Clauses Act provides that every person who, in any street, to the obstruction, annoyance, or danger of the passengers, shall do any of the things there mentioned, shall be subject to a penalty, but if you look at the section you will see that the penalty ought not to depend upon proof of the obstruction, danger, or annoyance.

1423. Have you adopted in Ipswich any general plan of sewerage?—We have not determined upon any plan of sewerage at present.

1424. Are you waiting until the best system is more thoroughly decided on?—We are, that is to say, we are hesitating to lay out money in the present state of the case.

1425. But are you not liable to proceedings while you are waiting?—Certain complaints have been made as to some parts of the town, and we endeavour to remedy them in the best way we can. I should say that there is not the slightest indisposition on the part of the local board to incur any amount of expense that is necessary in order to have a perfect system of drainage.

1426. Do you not think you will have to wait a long time if you wait until people are all agreed upon the subject?—I think it is very likely we should; I do not know that we should wait quite so long as that, but in the present state of the law it is at the peril of the local board, to create a nuisance to an individual, and they might have to stop their outfall as was done at Banbury. At Banbury they had a perfect plan of sewerage, but they got into great difficulty with regard to the outfall.

1427. If there was anybody in Ipswich with sufficient public spirit to proceed against you now for a nuisance you would be liable, would you not?—I do not know that we should be liable. The Secretary of State would send down and make an inquiry, and we should be quite ready to have any plan adopted that he thought was desirable. It is not that there is an unwillingness on the part of the local board to sewer the town, but they do not see their way to do it.

1428. Do you think it is the business of the Secretary of State, or that he is in any way qualified to state what is the best system?—I do not say that it is the business of the Secretary of State to say what is the best system. I merely mention the Secretary of State, because the remedy which the Act provides, if the local board neglect their duty, is that the Secretary of State may send down an inspector and order the work to be done. That is the proceeding we are liable to, and we should be thankful if the Secretary of State would come to us and point out how it should be done.

1429. You think if the Secretary of State proceeded to order the works to be done you would have to go on with some work?—Undoubtedly, and we are quite willing. One of the committees of our local board is appointed for the purpose of considering the subject, and there are on that committee four or five civil engineers, and there are practical chemists, and others engaged in agriculture; and we are quite ready to do anything that we can.

1430. But the Court of Chancery, without stating the nature of the works, may in the meantime order you in some way or another to abate the nuisance, may they not?—I do not think we are under any apprehension of a proceeding of that kind. We have done nothing. The Lord Chancellor might grant an injunction to restrain our creating a nuisance, but he cannot interfere with us for not abating a nuisance.

1431. If he were to issue an injunction against your polluting the streams, would not that necessitate your commencing some works or other?—Yes, if streams are polluted by us; but we have not polluted any stream that I am aware of.

1432. (*Earl of Romney.*) With regard to byelaws, I understand you to say that you think it is desirable, if it can be done, that as little should be left to byelaws as possible, and as much as possible should be put into an Act of Parliament?—Precisely so. I should say that unless that course is adopted there should be some provision by which byelaws, when approved by the Secretary of State, should be unimpeachable. We have two issues now to try where the question is disputed. First there may be a question as to the construction of the byelaw, whether this particular offence is met by the byelaw; and then we have also to try the question whether the byelaw is not *ultra vires*.

1433. I think you also added that certain things must be left to byelaws?—Yes, I think so.

1434. Those byelaws, in your opinion, should be of a general nature, and not made to affect particular cases?—Yes, certainly. If they are of a general nature they are improperly called byelaws, they are not byelaws at all; they are the law of the land, or they should be so.

1435. I understand you to be of opinion that as much as possible they should form part of the law of the land?—Yes.

1436. But there are certain other matters with regard to which it might be desirable that they should be changed more rapidly than the law could be changed, and that those should be in the nature of general byelaws?—I think that there should not be any general byelaws at all, but when what you seek to accomplish by byelaws is of a general character it should be by an Act of Parliament.

1437. When I speak of a general nature, I mean something like the general rules of the Poor Law Commissioners?—I think laws of a general nature should be embodied in an Act of Parliament.

1438. What would you leave to a byelaw?—I would give local boards power to make any byelaw that they may think necessary owing to some particular circumstance arising in the locality which is not of a general nature.

1439. You mean, not as against a particular individual, but as regards a certain class of cases?—As regards certain cases, not against any particular individual. There may be something in a particular locality which cannot be remedied by the general law, and that should be met by a byelaw; that is the province of a byelaw.

1440. With regard to Ipswich; you do not mean to express that you are unwilling to apply the Act, but that you are doubting and hesitating while all are in

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doubt as to the best mode of dealing with sewage?—Yes, that is so.

1441. Is that the only reason?—Yes, that is the only reason. Some few years ago we were going to make a large intercepting sewer, to collect all the other sewers, and to carry the sewage down into the estuary of the Orwell; very much in the same way as the sewage of London is now carried down the Thames and put out at Barking Creek.—Plans were prepared, and sections very elaborately got up, and we had an elaborate report of an engineer upon it; but we feared that the result must be either a nuisance to the neighbourhood, or that we should pollute the river, and since then there has been a growing feeling against putting the sewage into the river at all.

1442. You think if that had been done it would have been a wrong step?—I have no doubt about it.

1443. (*Mr. Shaw.*) Under the Public Health Act of 1866 there is power for the nuisance authority to provide a proper place for the reception of dead bodies, in order that if a person dies in a room where persons live and sleep, the body may be capable of being removed there; have you done anything under that clause at Ipswich?—We have not done anything under that clause; but I should say that attached to the cemetery there is a house for the reception of dead bodies, and built for the purpose.

1444. Do you find that persons will remove their dead there before burial?—No, there is an unwillingness to do so, but still there is a house, and it has been constructed expressly for that purpose.

1445. Is the house properly watched by any person resident on the premises?—Yes, perfectly.

1446. (*Mr. Powell.*) Have you a water supply at Ipswich?—Yes.

1447. Under a private company or under the corporation?—Under a company.

1448. (*Mr. Bircham.*) Is there any general system of sewerage in Ipswich at all?—No; the night-soil at present is carried away in farmers' waggons; a very large quantity is disposed of in that way; we have as many, I should think, as 90 farmers' waggons in a week loaded with night-soil from the town.

1449. Is the sewerage conveyed into any public cesspits?—The general plan is to have a cesspool to each house.

1450. There are waterclosets there commonly in use, are there not?—No, not commonly in use; there are many, but not one-sixth part of the houses have waterclosets.

1451. What is the population of Ipswich?—By the last census the population was 37,719, and the present population is estimated to be about 42,000.

1452. (*Mr. Paget.*) Are you able to speak at all as to the health of Ipswich whilst these questions are being discussed?—According to the last return of the Registrar-General, I think Ipswich is the third of the most healthy towns in the kingdom—18 per 1,000.

1453. Do you hear anything from the medical men there of the prevalence of fevers of any kind?—No, except that just at the present time there is a great deal of talk of smallpox.

1454. (*Lieut.-Col. Ewart.*) Do you get your water supply from wells to any extent?—The general supply of the town is from a very deep well.

1455. From house wells, I mean?—Very little now; almost the whole of the town is supplied by the water company.

1456. Where is the well which gives the general supply to the town?—It is in that part of the town comprising the parish of St. Clement; it is a very deep well, and through chalk. It is a well that was originally used in order to obtain water for the manufacture of paper.

1457. Are there many houses in the neighbourhood of that well?—Yes.

1458. What is the subsoil?—This well is almost entirely through chalk.

1459. But above the chalk, where the houses are situated, what is the soil?—I should think it would be gravel.

1460. Do not you apprehend that there is danger of pollution from the leakage of cesspits through that gravel?—No, the well is not liable to that; it is through chalk; it is impossible that there can be any connexion between the two, I should think. I am not aware of any houses so close to the well as to affect it.

1461. Do you apprehend that there would be any difficulty in getting land in the neighbourhood for the disposal of sewage if you carried out drainage works?—No, I think not.

1462. (*Chairman.*) How many inspectors of nuisances have you at Ipswich?—We have one inspector of nuisances.

1463. Do you find him work efficiently?—Yes, very.

1464. And you find one to be sufficient?—We have not found it otherwise.

1465. What is he?—He was a surveyor and he acts also as surveyor to the corporation.

1466. We may gather from your general evidence, may we not, that by the amendment of the law which you have suggested the Local Government Acts, if consolidated, would work well?—I do think so.

1467. And would be sufficient for the good government and sanitary condition of towns?—I think so.

1468. Have you any experience of the rural districts in your neighbourhood?—No.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 13th May 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Lieut.-Colonel EWART, R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

R. B. Grantham, Esq.

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(8.) RICHARD BOXALL GRANTHAM, Esq., examined.

1469. (*Chairman.*) You are a civil engineer, are you not?—Yes.

1470. And an inspector under the Drainage Acts, under the Inclosure Commissioners?—Yes.

1471. Particularly with respect to the Land Drainage Act of 1861?—Yes.

1472. Have you yourself held meetings under that Act since the passing of it?—Yes, I have held about 22 meetings at the places mentioned in the following list:—

List of Districts formed under the Land Drainage Act, 1861.

Name of District.	County.	Whether a District Board or Commission of Sewers.	Extent.	Area of Watershed.	State of the District.
			Acres.	Acres.	
Moreden Carrs	Durham	District Board	4,000	—	Works completed. The marsh reclaimed
Wormbrook	Hereford	Commission of Sewers	1,977¼	42,428	„ „ Great improvement.
Wissey	Norfolk	District Board	8,240¼	—	Some of shallowest places in the river are being dredged out.
Ladden Brook	Gloucester	Commission of Sewers	957	8,960	Works completed. Parts much improved.
Longdon and Elders-field.	Worcester	District Board	3,595	17,000	„ in progress. Nearly completed.
Llangorse	Brecon	Commission of Sewers	1,085¼	7,948	Works not fully carried out. Partial improvement.
Maxey	Northampton	District Board	7,918	21,417	Some work has been done.
Martham	Norfolk	Commission of Sewers	591½	2,707	No works done. Taxing area enlarged only.
River Idle	Nottingham	Do. do.	6,000	—	Very little done in clearing river of weeds and some shoals.
Stanmoor	Somerset	District Board	676½	1,318	Pumping engine erected and at work. Great improvement in land.
Currymoor	Do.	Do. do.	1,820	5,086	Ditto ditto ditto
Dysynny	Merioneth	Do. do.	2,564	40,960	Works completed. The marsh reclaimed.
Staunton Common	Hereford	Commission of Sewers	1,454	7,844	„ „ District much benefited.
Winterton	Norfolk	Do. do.	1,055	2,500	„ „ Partly a marsh reclaimed; and the remainder very much improved.
Chedzoy	Somerset	District Board	2,412½	4,348	Pumping engine erected and at work. District improved.
King's Sedgmoor	Do.	Commission of Sewers	11,259	51,200	Very little work done. No result.
Frodsham	Cheshire	District Board	4,217	11,259	Nothing done.
Stanton Harcourt, Northmoor.	Oxford	Do. do.	2,364	3,560	Works completed, and lands secured from the floods of the Thames.
Northmoor	Somerset	Do. do.	3,235	11,102	Pumping engine only recently erected.
Aller Moor	Do.	Do. do.	2,155½	3,338	Pumping engine. Not yet erected.
Haddiscoe	Norfolk	Do. do.	1,628	4,990	Ditto ditto
Muckfleet	Do.	Commission of Sewers	1,404	10,176	Commission only recently issued.
			70,608¾		

1473. I see that the meetings which are upwards of 20 in number have been held in several counties in England and Wales?—Yes. I will also hand in the following list of Commissions under the Act of 23d Henry VIII., chapter 5.

A List of Commissions of Sewers appointed under the Act of 23d Henry VIII., cap. 5.

Ely, Isle of	Wisbeach Hundred.
Essex	Burnham Southminster.
	Fobbingham, Cownigham, &c.
	Foulness Island.
	Havering and Dagenham.
	Rainham Bridge and Mucking Mills.
	Tendring Hundred.
Gloucester	Henbury, Langley, &c.
Kent and Sussex	Guldeford Level.
Kent	Dengemarsh.
	Gravesend and Sheerness.
	Lombards Wall to Gravesend.
	Mersham, Ashford, &c.
	New Romney.
	Teynham, Tonge, &c.
	Walland Marsh.
Lincoln	County of, City of, and part of the county of Nottingham.
Monmouth	Caldecot Level.
Norfolk	County of.
	Blofield Hundred.
Nottingham	County of, and several limits in Lincoln, York, Derby, and Leicester.
Somerset	County of.
Suffolk	Plything, Mutford, &c.
	Falkenham.
	Iken.
	Sudbourne.
Sussex	Rape of Arundel.
	Bramber.
	Lewes and Laughton.
	Pevensey and Hastings.
	Western parts.
Wight, Isle of	Sandown Levels.
York	East part of East Riding.

1474. Was not the Land Drainage Act, under which you are an inspector, an Act for the purpose of amending the law relating to the drainage of lands for agricultural purposes in England and Wales?—Yes.

1475. Under that Act were Commissions of Sewers issued for specified areas?—Yes; under the first part of that Act.

1476. And those Commissions were issued, were they not, on the recommendation of the Inclosure Commissioners?—Yes.

1477. How many inspectors were appointed?—With the exception of the first case on the list I have been the only inspector as yet.

1478. What are the general powers of the Commissioners of Sewers?—The Sewers Commissioners can proceed to do the necessary works for the purpose of improving the drainage of river valleys and the outfalls, and can tax the areas for the cost.

1479. What were the powers of the District Drainage Boards formed under this Act?—The District Boards have the same powers as the Commissioners of Sewers under part 2 of the same Act. The distinction is very trifling, except in the constitution. In the first instance, with respect to sewers, the parties interested, or one-tenth of the owners of the acres of the district, memorialise the Inclosure Commissioners to have an inspection of the area that they wish to have improved, and upon that the Inclosure Commissioners send down their inspector, who holds meetings and inspects the neighbourhood, the object of which is, to inquire, into the genuineness of the petition, as to the propriety of the proposed boundaries, and the number of proprietors assenting to or dissenting from the prayer of the petition. If one-third of the owners of the extent of land in the area dissent, the Inclosure Commissioners have to dismiss the petition. After the meetings I make an appointment with the parties to go round the boundaries of the district to see that the boundaries proposed by the promoters are such that the districts would be improved by the works that they propose, having regard to certain levels. My principle has been that the boundaries of those districts should be somewhere about five feet or three feet (as circumstances may admit in the formation of the country) above the flood levels, and when I have satisfied myself upon all that, I report to the Inclosure Commissioners the whole of the proceedings that have taken place, from the meeting till the time that I have

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finished my inspection, and they upon that consider the report, and will pass it or not, as they consider right. I am now alluding to the Commission of Sewers.

1480. Was that a substitute for the old Commission of Sewers appointed from time to time by the Lord Chancellor?—It was rather an extension of it. Perhaps I should just shortly tell you that in the year 1859 or 1860 I was introduced at the Home Office from the Inclosure Office to Sir George Cornewall Lewis and to Mr. Clive, a member of this Commission, who was Under Secretary, to see what improvement could be made in the arterial drainage and outfall laws generally. Sir George Cornewall Lewis, on considering the matter, thought it better to continue the powers of the old Sewers Commissions, and to improve them, than to make any completely new board. I helped Mr. Thring in the formation of this Act; but in the process of that consideration and Mr. Thring's drawing up this proposal, it was determined to have the second part, which is really a more popular kind of election than the other. During my inspection and my visits in the country the parties propose a list of members for the Boards, either for the Board of Commissioners or for the Drainage Board. The constitution of the Commissioners of Sewers is rather different from that of the District Drainage Board, in this way that the former are elected for life, the qualification being at least 100*l.* a year (3 & 4 Wm. 4. c. 22. s. 3 and 4). There is the same mode of appointing them through the Lord Chancellor and the two Chief Justices of the Queen's Bench and Common Pleas as there is under the old law, the 23d of Henry the Eighth, except that they are for life, and that the Commissions not terminable as the old Commissions are. With regard to the Drainage Boards, they are more popular, a new Board being elected annually; the qualification which they have is generally according to an acreage rate. The largest owners of acreage and sometimes large tenant farmers of the district have been put on those Boards.

1481. Who are their electors?—The electors are those persons who are in the district, who are also proprietors or large tenants.

1482. Is there any specified qualification for electors?—They must have been rated to and have paid the sewers rate of the district; the electors have from one vote to ten, according to the amount at which they are rated. (24 & 25 Vict. c. 133. s. 69.)

1483. In fact the District Drainage Board is a representative body?—Yes, it is. Then they have much the same power as the Commissioners of Sewers as to performing works and maintaining them, and taxing the area for the expenditure, the borrowing of money, and so forth.

1484. What is the difference generally between the Commissioners of Sewers and the District Drainage Board?—The only difference is practically in their election and in their duration; their operations are the same.

1485. The object of both is to conduct and to control the arterial drainage and outfall of river valleys?—Yes.

1486. What is the power of the Inclosure Commissioners to make provisional orders, confirmed by Parliament?—That is for the formation of a drainage district, and is done by a provisional order upon the owners of more than two-thirds of the area consenting, and is confirmed by Parliament in the usual way.

1487. Does not the Land Drainage Act of 1861, 24 & 25 Vict. c. 133, incorporate the Lands Clauses Act?—It does, except as to the purchasing of land by compulsion.

1488. Does it incorporate only certain sections of that Act?—Only certain sections. The provisions of the Commissioners Clauses Act of 1847 are incorporated with respect to certain things.

1489. Will you describe the jurisdiction for rating and also the principle of rating?—The jurisdiction of the rating is within the boundaries that I, as inspector, have settled. As to the principle, I have had a good deal of trouble in making the people who value understand what the principle of the law really is. As far as that goes, my idea is, and I believe it is that of most persons of experience, that the land should be valued in proportion to the benefit conferred by the works. To explain that, I may say that part of a district may be very much more improved by the withdrawal of water or the prevention of floods than other parts, and I consider that that part ought to be taxed at a higher rate than other parts of the same district that are only just affected by the drainage. For instance, if I should settle that the boundaries should be five feet level above the actual common flood line, I look upon it that the land by pipe drainage, and the clearing of farm ditches, and so forth, is benefited to that extent, and therefore I fix the boundary upon that principle.

1490. Is there any appeal against your valuation? Yes. I do not value, but there is an appeal to quarter sessions against an erroneous valuation.

1491. Who makes this valuation?—A person appointed by the governing body, and there have been appeals.

1492. Is the incidence of the rate defined in the Act?—It is not very clear. One of the incorporated Acts is 4 & 5 Vict. c. 45, and that was an Act to amend 3 & 4 William IV., c. 22. There is a slight expression in that which leads one to believe that it meant the mode of rating the lands which I have been describing. It is really upon the principle in proportion to the benefit and advantage received, or capable of being received; that is, lands improved by the drainage, or saved from damage, is the expression of the old law; for instance, sea-banks, and so forth. If a sea-bank, which is included in this Act, were made, all lands that would be saved from damage or reclaimed from the sea would of course be the lands that received benefit; but I find a very great difficulty in making the surveyors understand that principle. They go to the poor rate and they take that as the basis of their valuations, which is quite wrong, but it is done to facilitate the matter. There is another principle which I would recommend, that which has been exercised in Ireland. At the time of the arterial drainage in that country, their principle was to value the lands in the state in which they were before the drainage commenced; and then, when the works were finished, they were valued again, and the improved value was made the rateable value. I have published a table of that sort, which, if the Commission will allow me, I will hand in in a later part of my evidence.

1493. Do you think that the Irish mode of rating for improvements and arterial drainage is a better system than ours?—Yes, I think it is, for that purpose.

1494. As you make your areas only so many feet above the highest flood, I presume that in no case would your areas coincide with the areas of the river conservancy boards which take the watershed?—No, my levels would not go to so great an elevation as watersheds.

1495. Would there be any objection to making them coincide—there might be no objection to your area being larger than you wanted, if it was an object to make the governing body of both areas the same?—I do not think that there would be any objection to that.

1496. Do the same powers prevail over towns and country districts like the conservancy board of any tidal river?—Under the old law, the 23d Henry VIII. cap. 5, there seems to have been no distinction between town areas and agricultural or country areas, and in one case I know there has been a clashing of jurisdiction, which I believe will come under the attention of the Commission. That is the case of West Ham. When the works were in progress there, the sewers commissioners of Havering, which is in Essex, bordering on London to the east, somewhat interfered with the mode of procedure of that West Ham board.

1497. Would you suggest that where there is this conflict of small towns with larger areas, you should have

those laws which create the conflict repealed?—Yes, I think that it would be well that those powers under the 23d of Henry VIII. cap. 5 were repealed, and at the same time a distinct law enacted for agricultural drainage.

1498. At present I believe there is no special law for agricultural drainage independently of towns?—No further than the Land Drainage Act goes; and it still does interfere or would interfere in the case of the Commissioners of Sewers if it were not for the mode of inspection. I will just cite a case. In the river Idle, which is a large district that I inspected, they proposed to take in a part of the town of Retford in Nottinghamshire. I objected very much to that, because I thought it was quite distinct from the purposes of the Land Drainage Act, and I cut out those portions of the town which they had included—some gardens and some houses which went down close to the river—and I merely took power over the river as an outfall, so that the Drainage Board should have power only to deal with the river itself, and not tax the house property, or the gardens, or that sort of property; and I have made it a rule in most cases to exclude as much as I can villages and towns, or even farmsteads and buildings, from the area of the Drainage Districts. I have not been so particular about farmsteads and those sort of buildings, except in some cases, but I have been careful to exclude villages from the Drainage Act. I thought that the two were quite distinct from each other.

1499. The two objects of sewage and clear water drainage are very much the same, are they not?—To a certain extent they are, but I do not doubt that those Acts intended only to deal with the clear water and to get rid of water from the lands as agricultural lands.

1500. Would not it be the same process of survey very much, to arrange both for preventing the fall of polluted drainage into rivers, and for liberating the clear water from lands inclining to those rivers?—I think that it would be better to separate them, because the town itself can manage its own affairs in that way, and that they should prevent the pollution. The agriculturists perhaps in the management of the agricultural drainage would not care about the pollution of the rivers so much as getting rid of the water off their lands.

1501. Would not the actual survey and mapping for the purpose of liberating land from water and for the purpose of keeping polluted drains from rivers be the same?—Yes, certainly that would be so, so far.

1502. The area comprehending both would be all that land in which waters would flow by gravitation into a certain river, and it would be the same survey and plan which would keep foul water from gravitating into that stream and would liberate the clear water into that stream, would it not?—Yes.

1503. (*Earl of Romney.*) Do you see any objection in uniting the town drainage with the clear water drainage, if it could be done, and if this Act empowered it?—I have hardly considered the subject much. I am looking at it in this way: I think that there would be some objection on the part of farmers and agriculturists to be mixed up with towns questions.

1504. But with regard to towns or considerable country villages, do you see any reason against uniting them with the country districts for purely sanitary purposes?—Villages of small size might, I think, be taken into the drainage areas, because the same parties are mostly interested both in the land of the village and in the land round about it and the land in the valleys.

1505. (*Lord Robert Montagu.*) Do you say that under the Land Drainage Act of 1861 districts could be formed for the purpose of arterial drainage?—Yes.

1506. Could those districts be formed of such a size as to take in the whole river basin or watershed?—Yes, no doubt it could be so.

1507. Have districts been formed which have taken in the whole river-basin or watershed?—No, they have not; I have not had an instance of it. The difference, of course, is very considerable; I have generally considered and reported upon the watershed as well as the drainage area so as to leave the Commissioners to judge what kind of works are necessary, and to advise them as to the kind of works that are necessary to take off the water of the watershed, as well as the water of the particular district. It must be so; the works necessary for a small area of course must be sufficiently large to take the water off the watershed.

1508. You are favourable, it seems, to the union of all the districts within a river-basin under one government for the purpose of arterial drainage?—Yes, I think so. Of course there must be special provisions for very large towns.

1509. The principle is the same, is it not, whether the river basin or the watershed is a large one or a small one?—Yes, it is so.

1510. I presume that the only difficulty which arises is as to the constitution of the governing body?—Yes, I should fancy so, that of towns as compared with large watershed and river areas.

1511. Would you suggest that the governing body should be a representative body, or a body of paid officials appointed by the Secretary of State?—In thinking over that, I have always considered that one or two members should be paid according to the area, because the fisheries map, which has been laid before the Commission, gives you a notion of the enormous difference between some watersheds and others.

1512. You would suggest that a few should be appointed by the Government and that the rest should be representative members elected by the population within the watershed?—Yes, with a certain qualification or a certain proportion to the area drained.

1513. Could you not get over the difficulty of the towns by allowing the town councils to appoint their representatives?—Yes, that might be so, certainly.

1514. And might we say that the guardians of unions might appoint their representatives?—Yes.

1515. Of course limiting the number, so as not to get an unwieldly body?—Yes.

1516. And that body would act as a buffer between the local authority and the Secretary of State, or the central government, would it not?—Yes, I think so. I think that some scheme of that sort would be very useful in the country for several purposes.

1517. Then you do not see any very great difficulty in carrying that out, I presume?—No, I should think not. The agricultural and the town questions come very close together now in one respect, and that is in the utilization of sewage. The one interferes or may interfere with the other, but it might be regulated by a body having control over the whole watershed.

1518. And also in procuring a water supply from the hills adjacent?—Yes; it is of very great importance that that should be done. The Land Drainage Act (1861) does not give power to store water for the use of populations, at least not sufficiently so, but I have always suggested to the parties who are making those drainages to store water for the summer droughts, and for getting it for the villages, if possible, instead of letting it run away in the main outfalls. But you will understand that those drainage areas are very low in the country, and it is difficult to get an elevation for the water in that case, whereas in the watershed you can conduct the water almost to any level, that is to say, to districts above the lower country.

1519. And also such a unity of government would be beneficial in questions which might arise as to the deepening of the bed of the river miles down for the benefit of some lands higher up the river?—Yes.

1520. And also with regard to arterial drainage, you must carry the drains from a district high up the river to a district lower down in order to get a fall?—Yes, you must.

1521. Therefore if you had not a large area under one government, you would have to go for the benefit of one district above into the province of the government of another district below?—Yes; it has occurred in my experience, that those at the outfall want perhaps to construct works, and the other parties at a higher level

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will wait to see what they do, and will take advantage of their operations, instead of coming into the district, to be both the governing body and taxable alike; and I have endeavoured to counteract that as much as I could.

1522. So that unless there is that unity of government over the whole river basin or watershed, persons below might be taxed and be called upon to pay for works which would be for the benefit of those above?—Yes.

1523. In the case of sewage it would be *vice versâ*, those above would be called upon to pay for works which will only purify the river for the advantage of those below?—Yes, that is so.

1524. So that upon all those grounds it would be advantageous if we could have this unity of government over the whole watershed or river basin?—Yes; it is a very large question, of course. As I have just now stated, there would be enormous differences, taking the Thames, the Severn, the Mersey, the Medway, and all those large rivers to place them under one body, as compared with the river Idle and several other rivers that I have had to deal with.

1525. You mean that, though difficulties may arise, you do not consider that those difficulties are insuperable, and you are not recommending an impossibility to us?—No, except in the large areas. I cannot quite see clearly how the difficulty is to be got over, owing to the sizes of the areas.

1526. We will suppose for a moment that such a governing body over the whole watershed is established; have you considered at all the means which you would employ by rating or otherwise to obtain the necessary funds for carrying out the works?—No, I have not; certainly not on so large a scale as your question indicates.

1527. Have you done so on a small scale?—I have considered the smaller scales of river valleys, merely the valleys, not the watersheds, not taking in the tributaries to the extent that your lordship is now mentioning.

1528. What would you suggest in that case?—I have hardly made up my mind as to how to tax such an area. Of course wherever benefit is conferred I would tax them in proportion; and as in the case of the irrigation which they are carrying on in France under certain decrees of the government, if the Land Drainage Act, 1861, were ever amended I should propose that the irrigation of clear water as well as of sewerage should be embraced in it. I should put a separate tax upon the district in proportion to the benefit conferred, because it would be necessary to have other kinds of work for irrigation, distinct from those of drainage for removing the water, and also for bringing the water on. There must be more expense, and therefore there must be an extra tax upon those who wish to avail themselves of irrigation and also of drainage. The drainage and the irrigation may go together, or the drainage may be separate and the irrigation may be separate.

1529. I believe that when the Government gave power to deepen the River Bann in Ireland, all the proprietors within a certain distance of the river, say 10 miles of each bank, had to pay a certain tax, while the proprietors who were more than 10 miles from the banks had to pay a smaller tax in order to procure the funds for deepening the river?—Yes, I believe that that was done upon the principle which I have been recommending. There is a table in the paper which I read at the Institution of Civil Engineers, in which I introduced the Irish mode of valuing and taxing, and that table will give a very good idea of the plan which was pursued in Ireland.

1530. Will you put in that table in illustration of your evidence?—Yes. (*The same was delivered in, and is as follows*):

DRAINAGES IN IRELAND.

NAME OF THE DRAINAGE DISTRICT.	Area of Lands within One Mile of the Lands drained or improved, belonging to the same Proprietors as the Lands drained or improved.	LANDS DRAINED OR IMPROVED.				
		Area of Lands drained or improved.	Total Cost.	Original Annual Value of Lands drained or improved.	Increase in the Original Annual Value of Lands drained or improved.	Cost of Works per Acre.	Annual Charge per Acre of Principal and Interest.
	A. R. P.	A. R. P.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.
District of the Blackwater, in the Counties of Meath and Kildare.	11,010 1 31	3,827 2 18	12,115 16 6	2,119 1 8	1,034 7 9	3 3 3	4 0
District of Lough Neagh, in the Counties of Antrim, Armagh, Down, Londonderry, and Tyrone.	59,002 1 31	29,625 1 24	156,277 14 10	25,656 2 5	9,953 17 7	5 5 6	6 0
District of Oranhill, in the County of Galway.	2,303 2 19	974 0 16	3,871 16 2	260 12 5	315 10 1	3 19 6	5 9
District of Borrisokane, in the County of Tipperary.	4,433 3 29	1,517 0 39	10,038 17 11	728 7 10	505 19 5	6 12 4	6 6
District of Shinrone, in King's County and County of Tipperary.	5,533 1 4	1,288 3 7	8,209 2 9	-	434 19 7	6 7 4	6 3

1531. (*Mr. Powell.*) I presume that the Commissioners of Sewers and the Drainage Board have an eye to the drainage of estates which they assume to be drained, field by field, independently of their action?—Yes, by pipe drainage. That is a question which surveyors have been a good deal confused about with respect to rating. They have generally thought that they ought not to tax those fields that are already pipe-drained to the same extent as other fields that are not pipe-drained; but I do not think that that ought to be. I think that they ought to be taxed at the same rate as fields that are not drained.

1532. But where this Act of Parliament to which you have referred is in operation is anything done by the authorities thereby created with reference to the drainage by pipes or otherwise, of individual fields?—They do not interfere with the pipe drainage.

1533. All that they have to do with is the getting off the water from the fields, assuming the fields to have been drained?—Yes. It is only the arterial part of it, not even the ditches and tributaries in some cases, they merely make an outfall.

1534. Then your answer of course covers the case of cottages and houses. By your authority under the Act you do not regard the case of individual houses or individual cottages in any degree?—No, I do not. One of the reasons why I exclude them is that they should not tax the dwelling as an hereditament; and in some cases it has happened that they have taken the annual rental of the house instead of rating the land upon which it stands, it and its garden.

1535. But I presume that if there be a house, whether a large house or a small house, standing upon an area that is dealt with under this Act, the owner

of that property may drain his houses into the drains constructed under the Act?—Yes, he may.

1536. He is in the habit probably of doing so?—Yes, and his farm buildings, and so forth, are drained into the arterial drain.

1537. And the houses for the farm labourers, and the like?—Yes, and all that comes within that area; there is no doubt that they make the best of it when they get it.

1538. Will you read the 26th section of the Land Drainage Act, which shows the manner in which the powers of the Lands Clauses Act are arrived at?—The marginal note is "Provisional order by Inclosure "Commissioners to be confirmed by Parliament." Then the section enacts that "upon the completion of "such an inquiry, the Inclosure Commissioners may, "by provisional order empower the commissioners to "put in force, with reference to the land mentioned "or referred to in such order, the powers of the said "Lands Clauses Consolidation Act, in relation to the "compulsory taking of land; and it shall be the duty "of the Inclosure Commissioners, as soon as con-"veniently may be, to take all proper steps for the "confirmation of such provisional order by Act of "Parliament, and when so confirmed it shall be deemed "to be a public general Act of Parliament, and to "take effect accordingly, but previous to such confir-"mation it shall not be of any validity whatever."

1539. Then there is no power to purchase land otherwise than by agreement, except by a provisional order confirmed by Parliament?—No.

1540. The Act of 1861 gives the same power, does it not, to the Drainage Board as is possessed by the Commissioners of Sewers?—Yes, it does.

1541. I observe that the elective body for the Drainage Board is composed of those who during the year preceding have been rated to the sewer rate of the district, and have paid all the sewer rates?—Yes.

1542. And likewise that voters have a number of votes according to a scale, the number of votes increasing with the value of the property with reference to which they pay rates?—Yes.

1543. In answer to another member of the Commission you suggested the storage of water; can you point to any section of the Act which gives the Commissioners of Sewers or the Drainage Board any power to store water, and, having stored it, to dispense it?—There is no other power except what is implied in the words "supply of water for cattle" and "irrigation." They may do such works as will provide for irrigation, and this storage could in a manner be made available for irrigation.

1544. But not for domestic consumption?—No, not for domestic consumption. It would be merely amongst themselves that they would do it in a country place.

1545. Supposing that works were erected under the power that you hint at rather than fully describe for the purposes of irrigation, and that water was used for the purposes of domestic consumption, and that rates were actually levied with a view to the construction or maintenance of those works, do you think that those would be considered good rates under the Act?—No, they would not; they have no power to rate for such purposes.

1546. You have not made any allusion, I think, to the latter part of this Act of Parliament, which contains important provisions, enabling an owner under certain circumstances therein set forth to make drains over portions of the property of others?—No, I have not.

1547. Could you very shortly give the heads of that part of the Act?—I will give you the reason why I did not state that to the chairman before. I did not think it was exactly connected with the object of your Commission as a sanitary matter; it was merely as between two private parties, and not to get rid of sewage. There have been, I should say, no proceedings under that part of the Act yet that I am aware of. The Land Drainage Act of Ireland certainly has copied it verbatim, but I daresay that you are aware of another Act which has been used for the same purpose, that is to say, the 10 & 11 Vict. c. 38, commonly called Lord Lincoln's Act. That was intended as an Act for arterial drainage, to enable persons to drain through other lands than their own, and to clear watercourses, and so forth, to enable owners to get rid of their own water; but from some reason or other it has been very little used. I have been appointed assistant commissioner in one case, which is one of the very few which have been appointed under Lord Lincoln's Act. It was that of a person who was a minor, and who could not give consent to another person cutting a drain through his property, and there was a good deal of contention about it. Lord Lincoln's Act enables a person to drain through any land between his own and the outfall, belonging to a person who objects or is under disability, by applying to the Inclosure Commissioners. After public notice parties may object. The Inclosure Commissioners can appoint an assistant commissioner to make inquiries and report, and if they approve they issue an order authorizing the execution of the proposed works as allowed by them. If any land is taken the value is to be ascertained under the Lands Clauses Act. The Act provides also (sec. 14) for cases of occupiers of adjoining lands neglecting to cleanse and scour existing drains and watercourses, or to join others in doing so. It also provides (sec. 18) that persons interested in lands authorized to be drained under any local Act may have the same drained under the provisions of that Act. There have been only seven cases in which any of the powers have been applied for, and only three orders have been given.

1548. I am not clear whether your answer which you have just given us refers to Lord Lincoln's Act or to the Act of the 24th & 25th of Victoria?—The last part of my answer was as to the 10th & 11th of Victoria, chapter 38.

1549. The 10th & 11th of Victoria has chiefly reference then to persons under disabilities?—Yes.

1550. But the Act of the 24th & 25th of Victoria has only reference to the case of reluctant owners as I read it?—Yes; but the other Act refers to reluctant owners as well as to persons under a disability.

1551. Is it the fact that Lord Lincoln's Act, although an older Act than the one of the 24th & 25th of Victoria is found more practically useful?—I should recommend it in preference to the later Act.

1552. Could you point out any defects in the Act of the 24th & 25th of Victoria which have rendered it less useful than the former?—Except with respect to what I conceive to be the cost I really do not know what the reason has been.

1553. There is nothing in the machinery of the old Act, is there, which appears more convenient and in any respect more tempting than the provisions of the more recent Act?—No, I think not; we have had no experience under the third part of the Act at all.

1554. Can you explain the process under the 76th section in the case of the adjoining owners dissenting?—I have had no experience upon that part of the Act; but it provides that a person requiring a drain and outfall through the property of an adjoining owner may apply for leave, and, if the adjoining owner dissents, two or more justices in petty sessions, or an arbitrator, are (sec. 76) to determine, (1) whether the proposed drains will cause any injury, and (2) whether such injury (if any) can be fully compensated by money. If it is decided (1) that no injury will be caused the applicant may proceed with the works; if (2) that injury will be caused which can be fully compensated by money, then the justices or arbitrator are to assess the compensation, and on payment the applicant may proceed; but if (3) that injury will be caused which cannot be fully compensated by money, then the applicant is not entitled to execute the proposed works.

1555. Does any preference exist in your mind in favour of the old Act as compared with the more recent one which may have been the cause in some

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indirect manner of the action of the old Act and of the inaction of the more recent statute?—No, I cannot tell you that.

1556. (*Mr. McClean.*) Has a District Board the power to interfere compulsorily with the rights of millowners?—No, they have not; only under certain conditions; see sections 17, 18, 19, 20. They cannot remove any obstructions in streams, such as mills, and so forth; they are obliged to have the Lands Clauses Consolidation Act put in force to purchase them compulsorily.

1557. Would it not be essential to any general scheme of drainage in the country that there should be compulsory powers in that respect?—Yes, I think there should, and I can just explain why I believe there was not. When I was with Mr. Thring, with reference to this bill, we had a good deal of discussion upon the power of removing mills and obstructions in rivers, he thought that Parliament would not accede to anything like the arbitrary dealing with mills. I suggested that mills under a certain rental or a certain value should be removable by appealing to the Inclosure Commissioners to their inspectors to value them, but he said that that would perhaps embrace a very wide question as to large mills and so forth. Of course my idea was that no Drainage District, we will say of 4,000 or 5,000 acres, would attempt to remove a large paper mill or a silk mill, or anything of that sort, because the expense would be so large that they would never attempt it; and it could only be in cases which are innumerable in the country, namely, of small mills, such as small grist mills, and bone mills, small things of perhaps 50*l.* or 60*l.* a year rental, that it could be done within the scope of the Commission.

1558. Is there no power at present to remove any mill?—Only by an Act of Parliament confirming a provisional order.

1559. (*Dr. Acland.*) I think in answer to the noble Lord you stated that you saw no objection to there being one board over an entire river basin?—Yes, only I qualified it in this way, that I did not see my way to deal with those very large river basins such as the Thames. I daresay that you are aware of the Fisheries Act map, which gives the watersheds and the comparative areas of the watersheds very fairly, but how we are to deal with such areas as those 3,000 or 2,000 square miles, and so forth, and of course the enormous inspection which that would involve, I am at a loss to know. I should find it very difficult to agree to such very large bodies being formed.

1560. But it may be possible. I understood that one reason for your objection was that you thought there was a difficulty in joining the management of ordinary agricultural waters, if I may so call it, with the management of the sewage of a town district?—Not so very much as that the agriculturists would not like the mixture with the town areas.

1561. Do you think from your experience that there is a real objection on the part of suburban landowners to receive the sewage?—Yes, there is a considerable objection in many cases; I know of several.

1562. Then, supposing that towns found it to be necessary to cast their sewage by way of irrigation upon suburban lands, what are they to do?—They must only take it further off, till they find a place to put it.

1563. Do you think that they could find landowners who would take it?—No; it would not do to leave it in that way, because no one would have it if they could help it near their residences. I daresay the Commission are aware of the Act of 1867, which enables local boards to get land for sewage purposes out of their district compulsorily.

1564. Are there compulsory powers at present in the possession of local boards by which they can compel the suburban districts to take the sewage?—Yes, there are, through the means of the Home Office.

1565. But not in any other way?—No, not in any other way that I am aware of.

1566. Have you had any opportunity yet of judging whether the proper value is paid for such land, or whether the towns are compelled to pay above a reasonable value?—I think that the towns are compelled to pay above a reasonable value.

1567. How would you propose to arbitrate in such cases?—My experience is so very small that I do not know how to answer that question.

1568. At present it is only through inspectors, I believe, under the Home Secretary, that these matters are settled?—That is all.

1569. Have they power to fix the sum?—No, I think not. I think that is done by valuation.

1570. Could you suggest how such power should be given?—No; I cannot suggest how the value can be fixed, which is what I understand your question to refer to.

1571. You have laid down some principles for the valuation, namely, that the sum paid should be in proportion to the benefit to the landowners; do you think that the landowners are likely to benefit by receiving the sewage?—When I was stating those principles of rating, I alluded entirely to the removal of water from land by drainage, but not to receiving sewage, and, as we suppose, thereby improving land to the extent that it does or will do.

1572. Surely there must be in your knowledge many valleys, both suburban and otherwise, in which the landowners would benefit by receiving pure water in the way of irrigation?—Yes, I am aware of that. I have stated already, and I repeat it, that I think it would be very desirable in any scheme that there should be provision for irrigation where a district or county or person should wish to have it, but he should pay an extra rate for it.

1573. But does not that apply with more force, if our present knowledge is correct, to the reception of sewage water supposing the quantity of water is not excessive beyond the agricultural wants of the district?—The question which enters into that of sewage irrigation is the nuisance or rather the dread of nuisance. I do not think it would be such a nuisance as people apprehend, but the apprehension is so great that they would attempt to defeat almost anybody who proposed to carry it out. There has been a very strong effort made lately at Kingston to irrigate some place. I do not know exactly where it is, but I know the parties were defeated in it, the Home Office did not sanction it.

1574. At all events now there is no power of arbitration in matters of this kind?—Not with respect to value, the value must be an arbitrary matter to a certain extent, in fact whatever they can get the land for. I have been just reporting upon a district in the neighbourhood of London—Wimbledon—where I was applied to to report upon the plans of the surveyor of the local board, and they have got some land; and they informed me that if they had gone anywhere else they would have had to pay 1,000*l.* an acre for it. It is a common right; the lord of the manor is letting it to them at a very moderate rate, but they informed me that from the enormous quantity of building going on in that neighbourhood they could not get land elsewhere under 1,000*l.* an acre, and they wanted 130 acres for their purpose. I believe that state of things to prevail very extensively, and the same question has arisen at Surbiton, where they erected their sewer works into the Thames and were going on very well until the Thames Conservancy Act came into operation to prevent their polluting the river, and now that they are compelled to find land, they do not know what to do, it is a most difficult matter; they must take the sewage miles away.

1575. When you have used the word irrigation you have referred to the irrigation of land by clear water and not to the irrigation of land for the purpose of clarifying the sewage?—No; I have referred to clear water irrigation only, under the powers of the Land Drainage Act, and not so much to sewage, although I have had some little experience in that.

1576. (*Mr. Powell.*) The Kingston case is a case of sewage irrigation, is it not?—Yes.

1577. (*Chairman.*) From your experience, which

would you say is the most effectual body, a Commission of Sewers or a District Drainage Board?—The parties have the power of electing which body they will go under; the Inclosure Commissioners do not profess to exercise any control over that. When I have been asked which they should go under, where there are large proprietors and a few of them, and the lands are held largely in the area, I have recommended a Commission of Sewers, but in the case of lands that are very much subdivided, and are held in all sorts of areas, from 10 acres up to 200, I have recommended a District Drainage Board.

1578. Then the main difference between the two is not in their operation but in their constitution?—Yes.

1579. And where there are several persons interested, you prefer a Drainage Board because it is representative?—Yes, and because they are elective. They can change their governing body when they choose, whereas in the case of a Commission of Sewers, as I already said, they are for life, and they can only be removed by the sign manual.

1580. They can be put an end to, can they not?—No, I think not.

1581. Have there been in your experience any appeals to the Quarter Sessions?—Yes, there have on questions of rating. Under the powers of the Land Drainage Act the court of Quarter Sessions can refer it to any person, upon the parties agreeing, and I have had two or three of those cases referred to me where the parties have felt aggrieved as to the amount of rates. In one case in which I had an inspection, when the plans, and so forth, were laid before me, they represented that a large area was to be properly drained and proper works done, and everything of that kind, but in this case they had done all the works near the outfall, they had done nothing to the upper part of the district, which was represented to me as requiring it, as much as the rest of it, and one of the owners appealed against the rate which had been put upon him, he being rated at the same rate as those persons whom the works benefited very much, and when it was referred to me I altered the rate considerably. In another case where there was a district which could be divided into three portions the lower people where the works were heaviest did not want to pay as much as those who were above in another part of the district where the lands were really benefited by those expensive works, but they had done it so clumsily altogether, that I quashed the rate.

1582. Are the appeals restricted to questions of rating?—Yes, they were so in all those cases.

1583. In both cases the appeal was satisfactorily dealt with by the quarter sessions, was it not?—Yes, it was referred to me by the quarter sessions and I have never heard anything about it since.

1584. You have no reason to suggest any alteration in the body at all?—No, I have not.

1585. (*Earl of Romney.*) Did the parties agree to the reference?—Yes, they agreed to it before the quarter sessions, and it was referred to me. I have had three or four appeals of that kind, and those two cases I remember.

1586. (*Lord Robert Montagu.*) You have put in a paper containing a list of the Commissioners of Sewers appointed under the Act of the 23d of Henry the Eighth, chapter 5; they are only selected for 10 years I believe?—That is all.

1587. Had they got any borrowing powers?—I believe they have exercised them, but they cannot exceed the 10 years; nobody would give them credit beyond 10 years.

1588. They have got very few powers altogether, have they?—Very few powers.

1589. Have they any defined boundaries?—No defined boundaries; they range over any counties or any place; and I should also mention as connecting the new Act and the old one, that when an application is made for the formation of a district area under the Act of 1861, the Inclosure Commissioners require the consent of the Commissioners of Sewers and the local boards where those districts would interfere or override, they require that their consent should be given to giving up that portion of their district to this new body. I prepared that table because, as I said just now, they seem to be so connected with the management of large districts, and you would have to remove them or do something with them. If the Land Drainage Act were to be continued as an Act of itself, I would suggest that all the Commissions of Sewers should be done away with, and that all their powers should be carried on under the second part of this Act of 1861 by District Drainage Boards by provisional order and Act of Parliament.

1590. (*Mr. Powell.*) Are the areas large under the Act of the 24th & 25th of Victoria?—They vary from 400 to 11,250 acres.

1591. I presume that the districts are in all cases very sparsely populated?—Yes, very.

The witness withdrew.

(9.) William W. Willink, Esq., examined.

1592. (*Chairman.*) What is your office?—I am secretary to the Public Works Loan Commissioners.

1593. Could you state under what Act your board was formed, and its general object?—I am not prepared to give you the chapter of the Act; it was the Act of 1817, the 57th of George III.

1594. Was not an Act passed in 1853 for altering the mode of repayment of advances by the Public Works Loan Commissioners, under the Public Health Act of 1848, and other Acts?—Yes, by section 108 of the Public Health Act of 1848 the Public Works Loan Commissioners were empowered to make advances to local boards, for the purposes of that Act, repayable in 30 years, but the Act of 1853 reduced the term for repayment to 20 years.

1595. Section 113 of the same Act of 1848 provided, did it not, that interest shall be paid half-yearly, and the mortgage debt paid off by means of a sinking fund, that section being repealed by the 57th section of the Act of 1858, which gives power for raising money on the credit of the rates?—Yes, the Local Government Act does that.

1596. Will you state generally what are your powers of advancing money to local boards?—The powers of the board as regards lending, in so far as regards the terms on which the loans are advanced, and the repayment, are such as require the repayment of the principal by annual instalments during a period not exceeding 20 years, with interest at 5 per cent. upon the principal from time to time remaining unpaid. The limit of the period to 20 years, as regards local boards, will be found in the Act of 1853 (16 & 17 Vict. ch. 40 sect. 1).

1597. Have you any discretion as to the expediency of the works for which the local boards borrow money from you?—The board lend with the sanction of the Secretary of State for the Home Department.

1598. Is there any limit in your Acts as to the nature of the objects for which you may advance money to local boards?—To this extent; we are authorized to lend for the purposes of the Public Health Act, and the limit would be the limit of the objects described by that Act.

1599. Will you state the amount which you have advanced to local boards for works under the different Acts?—Under the Public Health Act, 1848, and Local Government Act, 1858,—690,129*l.* Under the Sewage Utilization Act—19,550*l.*

1600. Have you had any difficulty in getting repayments made regularly upon your advances?—Not any difficulty whatever; there are, so to say, no arrears whatever. I think there was one single loan made of about 700*l.*, in which there was a difficulty, but only one.

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1601. If that is the case, can you express any opinion of your own as to whether money might be advanced to local boards upon easier terms, if the law were altered to give that authority?—That ought to be the opinion of the Commissioners, and not of their officer.

1602. But, so far as your experience goes, there has been nothing to reflect upon the security, that is to say, there has been no difficulty found in getting the repayment regularly made?—None whatever. It is a security upon the rates, and, consequently, if there is a sufficient assessable value, I do not apprehend that there would ever be any difficulty in recovering the sums advanced.

1603. What is the whole payment which the local boards have to make to you, including both the interest upon the money advanced, and the sinking fund, which is to pay off the advances in 20 years?—The payments are not made in that manner. The principal is repaid by 20 equal annual instalments, with interest at 5 per cent. upon the principal, from time to time remaining unpaid.

1604. Are not those high terms, upon perfectly good security?—I do not myself apprehend that they can be considered high terms, because the local boards who borrow have had an opportunity of obtaining money in the open market at a lower rate if they could get it; consequently it is not to be supposed that they would take the money if the terms were otherwise than favourable.

1605. It is possible that public opinion may not be sufficiently acquainted with the nature of such securities in the market, and therefore the rate may be higher than the real value of the security would justify?—That may be, but we have no authority to lend at any other rate.

1606. Will you state to us what inquiry the commissioners make before they decide on applications for money?—It is the practice with the board, when application for a loan is made, to issue queries with a view to elicit the information, which the commissioners require, in consideration of the application. Those queries go partly towards ascertaining the nature of the works which are intended to be executed, whether the sanction of the Secretary of State has been obtained to the borrowing, and whether the requirements of the Acts of Parliament have been so complied with, as to make it certain that there will be no question as to the validity of the rates to be assigned as the security. In the next place a return of the assessable value of the property proposed to be rated is required, with the view of enabling the commissioners to judge as to the sufficiency of the security.

1607. Have you a blank form of the queries usually issued, which you can put in as your evidence?—I have such a form with me which I will put in. It will be understood that those forms are not applicable to all cases exactly; they may vary, but in the majority of cases they are applicable. The application might be for purposes of drainage only, or it might be for waterworks; but you can see from the forms what the general character of them is.

1608. Can you give us two blank forms, one of queries relating to applications under the Local Government Act, and the other to applications under the Sewage Act?—Yes. (*See Appendix*, p. xiii.)

1609. (*Earl of Ducie.*) The rate of interest which those boards pay to your board is five per cent., is it not?—Yes.

1610. Considering the goodness of the security, have they not any means of borrowing money in the open market at a lower rate than five per cent.?—The commissioners are not authorized to advance loans at a lower rate than five per cent.; but the Treasury have the power to reduce the rate of interest on loans advanced by the Public Works Loan Commissioners after the loan is issued.

1611. Do they ever get that authority?—The Treasury of late years have declined to exercise their power.

1612. Then practically they have no means of getting money at a lower rate?—Not from the Public Works Loan Commissioners; but they are at liberty at any time to pay off any loan or any part of the loan.

1613. (*Mr. Hibbert.*) Do you know whether the Treasury allow a lower rate of interest to be paid for the public works loans in Lancashire?—Those loans were advanced under special Acts, the Public Works Manufacturing District Acts of 1863 and 1864, which fixed the rate of interest under those special circumstances at 3½ per cent., and gave 30 years as the time for repayment.

1614. But that was done with the consent of the Treasury?—It was done by Act of Parliament. My impression is that the Act of Parliament provided that the commissioners should have power to make the loans at that rate without the consent of the Treasury.

1615. Was that rate of interest specified in the Act?—Yes.

1616. What was the term of repayment under the Act?—I think it was 30 years.

1617. Do you know whether in the repayment of those sums borrowed they are repaid in the same way that the other loans are repaid from the public works loan, that is to say, by a certain number of instalments?—Just in the same way.

1618. Would not it be easier for the places borrowing the money if it was paid back in the way of a sinking fund than under the present principle?—The board have power to advance loans repayable by way of an annuity.

1619. But would not it be easier for the place that it should be paid back in that way, for this reason, that the place borrowing the money has the largest amount to pay the year just after the money has been laid out?—Of course that would be easier for them at the commencement of the period during which the loans are lent them and more onerous towards the close.

1620. Upon the present plan is it not the case that it is more onerous at the commencement?—Under the present plan it is more onerous at the commencement and easier at the conclusion.

1621. Would not it be easier for the place altogether if it was put on the principle of number of equal instalments extending over the whole of the time?—That is rather for the consideration of the borrowers as to whether it would be easier for them.

1622. The borrowers have no voice in it as I understand; it is the Treasury or the Public Works Loan Office which fixes the principle of repayment?—The Act fixes it.

1623. Do not you think from your own experience that it would be easier for borrowers to make a number of equal instalments than upon the present principle?—As I say, it would be easier for them at the commencement, but not at the close; that is to say, they would have a smaller amount to pay at the beginning, but they would have a larger amount to pay towards the end of the period.

1624. That would not be the case if you fixed it at a given number of equal instalments?—Of course not.

1625. You mean that it would be harder at the end in comparison with the present plan?—Yes, the present plan is harder at the beginning, and easier at the end; the other would be easier at the beginning, and harder at the end.

1626. Should not it be rather the reverse?—I do not know; my own idea is that looking to the possibility of repairs, and the wear and tear of works, it is rather preferable that the burthen should be lighter towards the end when the repairs are likely to be heavier.

1627. Is it not the case that very large amounts are laid out for certain works which do not begin to repay for the outlay at the commencement of the term, which take say seven years before they begin to repay for the outlay?—Those works are however, I apprehend, not works of a productive character as to repaying.

1628. Take the case of waterworks?—Yes, to waterworks of course your observation would apply.

1629. Are there cases in which the Public Works Loan Commissioners vary from the mode of paying by annual instalments?—Yes, and in those cases instead of the money being repaid by annual instalments in 20 years with interest on the principle from time to time remaining unpaid the payment is required by way of an annuity, but still within a period not exceeding 20 years.

1630. Could you give the amounts which you lend out from the Public Works Loan Office for local boards in proportion to the whole of the amounts lent from the office?—I cannot give it all out of my head, but it will be all found in the finance accounts.

1631. Is it a large proportion?—It is not a very large proportion.

1632. (*Mr. Lambert.*) A large sum was advanced under the Public Works Manufacturing Districts Act, was there not?—The entire sum authorized to be advanced was 1,850,000*l.*, and I think that the whole, with the exception of about 80,000*l.* or 90,000*l.*, was advanced.

1633. And it was advanced, repayable by instalments not extending over a period beyond 30 years?—It was 30 years.

1634. And the rate of interest fixed by the Act of Parliament was 3*l.* 10*s.* per cent.?—It was.

1635. Has there been any difficulty in obtaining repayment of those loans?—None whatever; they pay very regularly on the whole.

1636. Do you remember whether there was any question raised as to the solicitors' fees on securities?—Yes, there was a question raised at the time at which the Act was brought into operation.

1637. Are you aware whether or not any of those local authorities objected to borrow on the ground that they considered that the fees at that time were excessive?—To the best of my recollection it was rather that there was an apprehension that such would be the case, and that prior to any issue, or at all events, very early in the stage of operations under the Act an arrangement was made by which a sort of scale was fixed of the fees, which the board's solicitors should be authorized to charge.

1638. There was some objection in the first instance raised, was there not, to the solicitors' charge?—Yes; my impression is that the board's solicitors, according to the usual practice, would have required a separate mortgage for each advance, and the arrangement which was made was that the first mortgage should be so worded as to provide for a simple receipt for the subsequent advances being sufficiently full, and that was acceded to.

1639. Was not there also another objection on the ground that the parties considered the fees for the original mortgage excessive?—No, I think not.

1640. There was a scale of fees for mortgages afterwards agreed upon, was there not?—There was a scale of fees for the advances after the first, but no scale for the first.

1641. Then the matter went on pleasantly?—Quite so; we have had no difficulty, nor any complaint whatever.

1642. (*Mr. Powell.*) Will you, in addition to the information which you have given in answer to a previous question, inform the Commission what sums have been advanced under the Labouring Classes Lodging Houses Act, 1851, as amended by the Labouring Classes Dwelling Houses Acts of 1866 and 1867?—Under the Labouring Classes Dwelling Houses Acts 48,500*l.*

1643. Will you also give the same information with reference to the Artizans and Labouring Classes Dwelling Act of last session?—Nothing has been advanced under this Act.

1644. Will you give the same information with reference to the advances under the Baths and Washhouses Act, the 9th & 10th of Victoria?—Under this Act 81,546*l.*

1645. And likewise with reference to the advances under the Recreation Grounds Act, the 22d of Victoria, chapter 27, and the 23d & 24th of Victoria, chapter 30?—Nothing has been advanced under this Act.

1646. If there be any other Acts relating in any sort to the public health or the physical condition of the people will you state the Acts and inform us whether you have made any advances under them?—Under the Burials Acts 765,446*l.*

1647. You stated that the Treasury may reduce the rate of interest; have they unlimited powers of such reduction, or are their powers defined by some statute?—I believe the power is unlimited.

1648. Have there been any returns made to Parliament showing the amount that you have lent, with the conditions of the repayment?—Returns of the amount lent year by year from the time at which the commission was first appointed, are published every year in the finance accounts.

1649. Have there been any cases of long arrears in the repayment of advances?—Not as regards local boards of health, or for sanitary purposes.

1650. But with regard to baths and wash-houses?—No, I imagine not; but I have not inquired.

1651. What remedies have you in case of default?—The remedy in case of default upon the rates I cannot say. If rates were not made there would be a *mandamus* to compel the making and levying of rates, and there would be the ordinary process against a defaulting ratepayer, if he did not pay.

1652. You would have occasion to resort to the circuitous process of *mandamus* in case the authority, whatever it may be, in any instance did not pay with regularity?—I apprehend so, but I am not the law adviser of the commissioners, and I could hardly say positively.

1653. Have you any advantage as compared with private lenders, as regards priority of charge?—Not on the rates.

1654. Have you on anything else?—Not under the Acts to which reference has been made.

1655. (*Mr. Cave.*) Do you ever refuse to lend for the purposes of local boards in cases in which the security is good?—Never, that I am aware of.

1656. Have you not refused to lend in analogous cases, such as those under the Pier and Harbour Acts?—I hardly consider cases under the Pier and Harbour Acts as analogous.

1657. Are not those cases in which the Act authorizes borrowing from the Public Works Loan Commissioners?—Yes, but the purposes are by no means such as to be analogous to the loans which are made for sanitary objects.

1658. Of course the objects are not similar; but what distinction do you draw between your power of refusing in the one case and in the other?—We might consider that applications made for loans under the Harbour Acts might not come sufficiently within the scope of the Acts to justify their being taken into consideration.

1659. Have you not refused in some cases where recommendations have been made by a department of the Government?—No department of the Government has authority to make a recommendation in the case of the Harbour and Passing Tolls Act, 1861. You are referring to cases recommended by the Board of Trade; the Act of Parliament provides that the Board of Trade shall approve of the borrowing, but there is no single word as to their recommending.

1660. You stated, did you not, that in other cases the sanction of the Secretary of State would guide the commissioners in their lending?—Excuse me; what I intended to convey was that the board requires to be satisfied that the sanction of the Secretary of State has been given, because the Act makes the sanction of the Secretary of States a condition of the advance of the loan. The recommendation of the Board of Trade in the case of the Harbours Act is not required, because all that they have to give is an approval.

1661. You do not consider that that approval exonerates you from going yourself into the question?—No,

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certainly not; it is only the approval of the borrowing by the parties; it has no reference whatever to the lending.

1662. Of what use is such approval of the borrowing if it does not carry the approval of the lending?—That is a question which Parliament should answer, as it was Parliament that made the enactment.

1663. Then you think there is some fault in the legislation on the subject?—No, I do not pretend to say that there is a fault, I merely tell you what the statute provides.

1664. I want to get at the distinction between the two classes of cases?—In the case of harbours the lending is at the discretion of the Public Works Loan Commissioners, without any sanction on the part of any other Government Department, whereas in the case of lending for the purposes of the Public Health Act, the sanction of the Secretary of State is a necessary condition to the lending by the Public Works Loan Board.

1665. Then in one class of cases you consider that you have a veto upon the lending and not in the other, is that so?—It is not a veto upon the lending, because the lending is the act of the commissioners, and they can hardly be said to have a veto upon their own acts.

1666. Perhaps that is not the proper expression; but in the one case you consider yourself justified in refusing to lend, and not in the other?—I did not say we should not be justified in refusing to lend in the other, but we should not be justified in lending without that sanction.

1667. In the other class of cases also you consider that the recommendation and the sanction of the Secretary of State is not final, but that you have the power of exercising a discretion in the matter?—Yes, we should have the power of exercising a discretion in the matter undoubtedly.

1668. In fact there is no real distinction between the two classes of cases then?—I think there is, because I can see a distinction between the approval of the borrowing, and the approval of the lending.

1669. In either case the board have a right to exercise their own discretion, and to refuse to lend?—In either case they would have that right.

1670. And there is no distinction between the two classes of cases in that matter?—As I understood your question you were seeking to ascertain the distinction which might exist with reference to the powers of other departments in cases of applications for loans.

1671. I want to know whether your board have the entire discretion in matters of lending?—Yes, they have the entire discretion in matters of lending.

1672. And you could refuse to lend in any case to any one of those local boards, even if it had the sanction of the Secretary of State?—Yes, quite so.

1673. Is your decision in such a matter guided in any particular year by the amount lent in that year?—The board, like any other lending institution, would necessarily take into consideration their ways and means. The amount placed at their disposal is limited to a certain sum annually, and they have to satisfy themselves that the state of their funds is such as will enable them to meet the demands upon them. There are cases in which applications for loans are refused owing to the insufficiency of the funds to make the advance.

1674. Do you know on what principle the amount of that sum is fixed in the estimate?—I may state that the amount which the board have at their disposal for advances for ordinary purposes is 300,000*l.* each year.

1675. Is that a fixed sum?—That is a fixed sum for their ordinary purposes. Then there are several of those various other Acts which have been referred to from time to time, as in the case of the Public Works Manufacturing Districts Acts; there are special funds for those and special funds also for harbours.

1676. When was that 300,000*l.* fixed as the sum which was to be intrusted to you for the purpose of lending every year?—I believe it was fixed by the 5th of Victoria, chapter 9, and has been continued by subsequent Acts; lastly by 29 & 30 Vict. cap. 17. sec. 1.

1677. It was by Act of Parliament that that sum was put at your disposal?—Yes.

1678. Then of course under those circumstances you do not send in an estimate every year as to the amount which you think you will be likely to want?—No.

1679. Supposing you do not lend the whole of that sum, is the balance paid into the Exchequer, or do you keep it toward the next year?—We are authorized to draw it all.

1680. If you only lend 200,000*l.* this year you would have 400,000*l.* next year?—Yes.

1681. Do you know that the local boards and public bodies of that kind have considerable difficulty in borrowing in the open market notwithstanding the goodness of their security?—No, I have no knowledge of that, but I can imagine that it might be the case.

1682. Would that be in consequence of the principal not being payable back in one sum?—Yes; there are many lenders whom it does not suit to lend their money to receive it back by instalments.

1683. I suppose that almost the only source from which local boards could borrow money would be insurance offices in fact?—Yes; insurance offices would be the only source, I suppose. I am not aware whether the Bank of England would lend them any money.

1684. Are there not drainage companies and other companies which lend money for those purposes?—I do not know; there are so many of those financial companies now that I really cannot say, or at least there were a great many.

1685. (*Chairman.*) Does not it appear by the first section of the Act of the 16th & 17th of Victoria, chapter 40, as though local boards used to be able before that Act to repay the advances by way of a sinking fund in 30 years?—Yes; local boards may still borrow, and repay in 30 years, but by the 16th & 17th Vict., chap. 40, the Public Works Loan Commissioners can lend only for 20.

1686. (*Lord Robert Montagu.*) Does the Commissioners Clauses Act of 1845 apply to your board?—I cannot say. No doubt there are cases in which it would, but there are so many Acts in which that Act is incorporated that I cannot answer precisely.

1687. But the Act which you have spoken of is the 16th & 17th of Victoria, chapter 40, is it not?—Yes.

The witness withdrew.

C. Wilson, Esq.

(10.) Charles Wilson, Esq., examined.

1688. (*Chairman.*) Are you connected with the local board of health of West Ham?—I am clerk to that board.

1689. Under what Acts does the West Ham board conduct its local government?—Under the Public Health Act of 1848, the Local Government Act of 1858, and the various Acts which have passed since, which are supplementary to them, but those are the two leading Acts.

1690. You have, in fact, adopted the Public Health Act?—We are constituted under the provisions of that Act.

1691. Have you no special West Ham Act?—Yes, we have one, but very little affecting the general question. There was an Act of Parliament passed in the session of 1867, principally with a view of enabling us to build a town hall, by arrangement with the parish officials, and there are a certain few clauses of the Metropolitan Acts incorporated with ours; but in the main we are under the general law; we can hardly be deemed exceptional.

1692. How have you found the Public Health Act work with respect to your construction of sewers at West Ham?—The 69th section of the Public

Health Act, the 11th & 12th of Victoria, chapter 63, provides that in case any future street be not sewered (and then follow certain technical words about making up streets) to the satisfaction of the board, the board may do it, but previous to that notice is to be given in writing to the various owners of the property fronting that street, calling upon them to make up such parts as abut upon their own individual portions. The effect of that is, that if such notices were complied with, you would have a very great piece of patchwork when you call upon 100 people to make up various parts of the road. I thought that perhaps the Commission would understand it better if I produced the working plans which I have with me with regard to two roads which we are now forming, where there are at least 100 properties in each street; we have to find out first the owners of those various properties, some of which occasion a great deal of trouble, as I will explain in a moment; but having found them out, and served them with notices, we call upon them, under the law, to make up that particular portion of the road fronting their own place. In practice not one man in 100 ever does it, and if they did the Commission would see see that it would be, as to the roads, a terrible piece of patchwork; they would not be using the same description of granite, and probably one would make it up in one way, and another in another; but the effect of it is this, that they never do it, as I say, in one case out of 100. The only result therefore of the notices served upon them is to leave the board to make them up themselves, and then in the event of there having been (and it is almost impossible to avoid it) any difficulty in the service in finding out the owner, or if we have been deceived, the owner or the occupier of course gets the benefit of it, and he escapes payment.

1693. Is there anything in West Ham and that suburban district which renders the Act less applicable to West Ham than it would be to ordinary towns in that particular?—No, I think not. In the metropolis it is different; and I happen to know, from being connected with property at Leeds, that in their Local Act all that is required is that when the body, whoever they may be, that are charged with the carrying out of the Sanitary Acts, wish to make up streets in this way, all they have to do is to stick a notice at the end of each street, and if those notices are not complied with the body does that work. If that course to which I called the attention of the Commission is objectionable with regard to the roads, it is doubly so with regard to sewers. In this very road we have called upon about 50 or 60 people to make up their sewers; that is to say, each party would be called upon to make a sewer in front of his own place. Of course it would be utterly impossible that any effective sewers could be made in that way, when you bear in mind that in order to carry out the work the owners of the property on each side must combine. Of course if the owners on both sides combined, they would make the sewer in front of their houses; but then you would have the difficulty of levels, &c., in connecting them with other houses. But when you consider that you have two parties owning opposite houses, you practically call upon the man on one side to make a sort of half sewer, and the result would be that the two parties would most probably overlap each other, so that it must be a complete piece of patchwork, and in point of fact it is never done.

1694. Can you suggest how that section might be amended?—If it is a board with whom it is left entirely, it is at their option to decide what is proper to be done, and if they so decide, I would enable them by advertisement to give notice that it is their intention to do such or such a work. It might, perhaps, be a matter of justice to permit any person objecting to appeal to the magistrates within a given time, but that would not necessitate the calling upon the various owners to make good each particular part in that way which leads to nothing except the possibility of their escape from ultimate payment. I should add that there has been extreme difficulty in doing it in this very case. A great quantity of the land is mere building land now lying vacant, as to which we have no possible proof of ownership. We cannot get at them, and in order to affect the owners, as we cannot serve them with notice, we have to stick up notices upon the land; it must be on some conspicuous part of the particular land. One plot, very likely about 150 feet long, may all belong to one owner, or it may be carved out in various parcels. We have no means of knowing that, and if we do not set up posts upon that particular portion belonging to any particular man, he escapes from payment; and if we do it as we have done, the extreme probability is that the poor people in the neighbourhood go and get hold of the posts the very next night and burn them away to light their fires to heat their kettles with. That is what we generally find.

1695. Are there no powers under the Act of 1858 as to streets and sewers which give local boards the means of carrying out such schemes?—None whatever. There are some clauses in the Act of 1858 which tend to simplify the matter, and which direct how the notices are to be served, and they also point out who is to be deemed the owner at the time the works are completed, which was in doubt before this, because those works must occupy some months, and very often the property is in a state of transition; it is always changing hands. The Act of 1858 defines who the owner is to be, and also in some degree removes one or two difficulties, but not of that character to which I have been alluding.

1696. Is there nothing upon this point in the provisions of those different Acts of 1848 and 1858 and others which give local boards the means of carrying out the general schemes which you suggest, more particularly the Act of 1848?—It was to the Act of 1858, the Local Government Act, that I alluded in my last answer, that it in some degree simplified matters inasmuch as it defines who the owner is, and provides within what time we could recover before the magistrates.

1697. Have you found any particular difficulty in construing those two Acts together?—I cannot say that I have with regard to those two Acts, namely, the Public Health Act and the Local Government Act; but there are difficulties in construing some of the other amending Acts with them.

1698. Are there both cases of repetition and also of conflict in the provisions of those various Acts?—I have not had my attention particularly called to any direct conflict. I think I can point attention to this, that in consequence of this mode of amending and constantly adding to Acts some things escape attention. There is a very prominent case with regard, I think, to the Sewage Utilization Act of 1867, to which I would call the attention of the Commission with reference to ditches in the neighbourhood of and the boundaries of places. The Commission is probably aware that where the Public Health Act is in force the nuisance authority and the sewage authority are the same, but with regard to many of the recent Acts, the Nuisances Removal Act, and those which have been applied in places where the Public Health Act is not in force, the nuisance authority has not been the same with the sewage authority. Under the Nuisances Removal Act the board of guardians were constituted the nuisance authority, but under the Sewage Acts, the Sewage Utilization Act of 1865, and its amending Act, the Sanitary Act of 1866, various powers were taken from the nuisance authority and given to the sewage authority; but in doing so some of the powers given by the Nuisances Removal Act have been transferred to them and others have not been transferred. Not seeing myself, or not understanding any reason for the distinction, I can only suppose it to have been an oversight. I may be wrong, but it appears to me that there is no sense on the face of it why certain powers should have been transferred from the nuisance authority and others which certainly justified as

much the action of a nuisance authority should not have been conferred upon the same board.

1699. What is the constitution of the local board of West Ham?—It consists of 21 members, 18 elected by the people; six go out of office every year, and three of them are appointed by the Havering and Dagenham Level Commissioners, who are commissioners appointed under one of the old Commissions of Sewers which are still extant.

1700. This is the board which in West Ham exercises all those various powers of which we have been speaking?—Yes, all of them.

1701. Do they not conflict with other authorities in the neighbourhood of West Ham?—Slightly. With regard to the body that I have spoken of, the Havering and Dagenham Level Commissioners, they have the control of all the matters connected with the surface drainage of Havering and Dagenham Level, which extends far beyond West Ham. It was found necessary to reserve their powers when the local board of health was constituted, and in some two or three instances we do come a little in to conflict, but not to any great extent; and it is a case so exceptional that I suppose it requires altogether exceptional treatment.

1702. What suggestion have you to make as to the mode by which local boards are to raise the sums necessary for their expenditure in the shape of general district rates?—The suggestion that I should make would be that local boards should generally be put upon the same footing as burial boards and boards of works are in the metropolitan districts. At present in our large parish we have to make separate rates. This is one-third of our rate book (*producing a book of considerable size and showing it to the Commission*); it now consists in our large parish of something very nearly 400 pages, and inasmuch as our board has thought fit to make quarterly rates, the effect is that about 12 of those books have to be made every year with corresponding items, receipts, and checks, and we have to employ another series of collections, all of which is done in other districts by simply making an order upon the poor law authorities and the overseers. The board of health say, "We want so much money," and the overseers raise it at the same time as the poor rate, and the effect is that one class of collectors collect it all, and that all this enormous trouble which, as to a great part of it is merely copying, is avoided. It is so in the metropolitan districts entirely.

1703. (*Earl of Ducie.*) Do I understand you to say that the local boards should do the work instead of calling upon the individual owners to do it?—The effect is that they do so now; but I would let them do the work without first calling upon the individual owners to do it, because I say that the effect of their calling upon them, if they did it, would be only a piece of patchwork; but they never will effectually do it in sewers, I never knew an instance of it; and with regard to roads not one case out of 500. The effect therefore of serving those notices is simply to give the parties a loophole for escape under some technicality or another.

1704. You would do the work without giving any notice, but merely charging the parties when it is done?—Yes. I would, if it was necessary, have a notice put up, or an advertisement, and let any person who chooses object to it, giving him some period during which he might appeal to the justices to show that it ought not to be done.

1705. (*Mr. Hibbert.*) You were suggesting that the rate should be paid out of the poor rates; would not there be a difficulty in that, in this way, that under the Local Government Act you assess a smaller amount upon agricultural land, and, therefore, if you pay it out of the poor rate you would be taking it upon the full assessment; how would you meet that?—That is easily met in practice by the parish officials putting one fresh column in their book, as we do.

1706. Would not it be necessary to make a separate collection of the rate?—No.

1707. How would it be paid out of the poor rates?—When I say paid out of the poor rate, perhaps the words are not strictly accurate. It would not be paid out of the poor rates, but the collectors would collect it at the same time as the poor rate. It would be simply to introduce that one column to meet the objection.

1708. The poor rate collector would collect it for the local board?—He would collect it for the overseer, and the overseer would hand over to the board the amount of money. It is the plan which is adopted in Islington and many other metropolitan places.

1709. I understand you to suggest that it should be collected by the poor rate collector?—Yes, to save all this amount of needless and useless expense of labour; but not having my attention at the particular moment drawn to the latter question, why I think we could get rid of one-fourth of this process I have not explained how it is carried out; but it is carried out in practice, and it is extremely simple.

1710. Will you explain exactly how you would carry it out?—Take a case in the metropolitan districts adjoining our own, namely, Poplar and Bow. In both of those cases you find there are different boards of works, but their practice is the same. When they require money they make an estimate of what they require, and then instead of directing their functionaries to levy a rate themselves, they send a *precept*, stating how much they want, to the parish officials, and the parish officials raise that amount for them and hand over to them the money.

1711. But do they raise that amount upon a separate assessment, or upon the same assessment as the poor rate?—Upon the same books; but not having had to fight them I cannot say what the particular form is, except that I know that they have a separate column when they make the demand for that amount, stating that the collector called for so much for the poor rate, being an assessment of say 1*s.* in the pound for the poor, and also for the general district rate of 3*d.* or 4*d.* in the pound, as the case may be; and also there is the same column in their receipts.

1712. Do you really mean that the poor rate collector should collect the rate for you?—Yes, undoubtedly.

1713. But not that it should be paid out of the poor rate?—Not that it should be paid out of the particular sum raised, but that it should be always collectable at the same time; therefore, when the collector goes round he goes round for both, and he gives the receipt in the usual form.

1714. Supposing that the collector were to collect both the poor rate and the district rate, would both rates have to be approved by the justices?—No, ours are not approved by the justices. The board makes them, and the board is perfectly arbitrary in this matter. For instance, this rate book has never been approved by the magistrates at all. It is not necessary with the district rates. It is expressly provided that it should not be.

1715. Here is a paper showing the mode in which the rates are collected in Marylebone (*handing a paper to the witness*). Is that similar to what you suggest for West Ham?—Yes; the board here instead of making rates for itself issue a *precept* to the parish officers requiring so much money, leaving them to collect it in the same way and upon the same principles as I have suggested.

1716. (*Lieut.-Col. Ewart.*) With regard to your suggestion about the question of the inhabitants making good the portion of street and the portion of sewer in front of their own houses, if your suggestion were carried out you would still leave the inhabitants to make their house connexions, would you not?—Yes, that is not affected by the system at all, they still have to do it. The inhabitant of each house, or the owner, still has to make his connexion with the sewer, but the section in question refers to making the trunk sewer down the street.

1717. You would not alter the system of each

house making its own house connexions?—No, not at all; it would be quite needless to alter that.

1718. How would you propose to assess the proportion that they should pay?—That must be as at present, so long as the duty is cast upon the surveyor, after the work is done, of estimating the cost and apportioning it amongst the various owners. But there is one other practical difficulty in connexion with that. The Act expressly says that the surveyor, in apportioning the expenses, is to do so including the portion at the intersection of streets, and a large portion intersects cross streets where there is no house exactly abutting upon the sewer. If nobody does that portion of the street it, of course, will be for the surveyor to apportion the expense in making it among the whole; but if this man does his little bit of work, and that man does his little bit of work, he has done all that the law requires that he should do, and when the surveyor therefore goes to apportion the expense of that intersection of the street, he is of necessity compelled to throw it upon the man who has not done the work; and the other man gets scot free, because he has done what the law requires of him. The general form of the notice is given in the Local Government Act. You require him to make good the road in front of his own house; he does it, and then the surveyor is left to apportion the expense of the intersection, and you do not call upon each to do anything towards the point of intersection of the street. Then, supposing that one half of the people do the work, and the other half do not do their part, the surveyor is of necessity called upon to apportion the cost of making good the roads at the intersection of streets, among those who have not done the work.

1719. You would do the work, throw the expense on the rates, and leave the house connexions to be made by the individual owners?—Not throwing it upon the rates. I would still lay it upon the owners; but I would never give the owners, in the first instance, an opportunity of doing it themselves, because if they do it, it is the most prejudicial thing that can happen. They cannot do it as cheaply as any public body, a hundred men each employing his own men to do his share.

1720. You would have to assess it, would you not, according to the frontage?—Yes, quite so, as at present. I only propose to abolish the opportunity which is, practically, seldom made use of, of giving the parties the option of doing it in this patchwork form themselves.

1721. (*Dr. Acland.*) Are we to understand that those difficulties would occur in all the districts in London?—I apprehend that they would; but in few parishes to such an enormous extent as in ours. We have that enormous district called London over the border, known by the name of Canning Town, and we have had all those roads to make up, and the amount of labour has been fearful in getting back the money.

1722. (*Mr. Lambert.*) With regard to the rates which you spoke of just now, on what basis are they made; are they made upon the same basis as the poor rate?—Upon the same basis as that assessment; indeed, we are expressly directed to follow the poor rate; but all land of railroads and some other properties and land covered with water, is only rateable at one-fourth of what other property is.

1723. Then do you, in point of fact, adopt the poor rate valuation for the purpose of your assessment?—We do. We are directed by an express clause in the Public Health Act to do so; but there is a provision that if the board think that the assessment by the poor law officials is not a correct one, the board are enabled to amend it; but in practice we never do that, we follow the poor rate assessment.

1724. If persons are dissatisfied with your assessments, to what tribunal do they appeal?—They simply come to us, and, as a matter of practice, we say that whatever the overseers will do we will do; that is the view adopted in the statute, the law clearly contemplates that there shall be only one assessment.

1725. Is there any appeal to the sessions from your assessment?—Yes, the same as for the poor rate.

1726. Have you known persons avail themselves of that power?—Never; because in fact we have never given them occasion. What we have said is, if the poor law officials will alter it, whatever they do we will do. The only case that we ever had of an appeal to the sessions with regard to our rate, which was a very large one, was from the London and Victoria Dock Company; but it affected a question that could not arise under the poor rate upon this very question of valuation which we are speaking of. It was a nice and intricate question. Assuming the Victoria Dock Company to be properly rated at 16,000*l.* a year, which they were to the poor rate, it being land covered with water, how much of those profits were deriveable from land covered with water. It was a very nice point, and we were about five or six years about it, and could not get anybody to tell us. Of course the dock company told us immediately that out of the 16,000*l.* 15,900*l.* and some odd money was derived from the water, and that the only profit got from their enormous warehouses was some 97*l.*

1727. There is power to compound for rates with you, is there not?—Yes, we have the same power as existed under the poor law till lately.

1728. Do you exercise that power?—Yes, we have exercised that power.

1729. In the same manner as the overseers have done?—Yes, precisely the same; we follow entirely in the wake of the overseers.

1730. What you propose is a separate assessment column for your rate in the rate book?—Yes.

1731. With a collecting column?—Yes.

1732. You would propose to make use of the same rate and receipt book as they do in London?—I would propose to adopt the same mode as in the case to which my attention has been called. Never having been in office in any one of those districts, I am not able to say whether that particular mode works well or not. I know nothing against it, and those who have to do with it tell me that it works very well.

1733. It would be necessary to make the two rates at the same time, would it not?—It would be very desirable, because, as will be seen, the number of people in those large parishes is enormous.

1734. You have mentioned another authority in your district, a sewer authority?—They are scarcely the sewer authority for the town; it is not a sewer for sanitary purposes; they have the surface drainage of the valley of the Lee.

1735. Do they act under a local Act?—No, under the old Commissions of Sewers.

1736. The district over which they exercise jurisdiction is much larger than your district?—Yes, very much larger.

1737. Are you able to say how much?—In point of area it is three times as large, because the very name implies that they go down to Dagenham and Havering Bower, which is 14 miles from London, and therefore they must include the whole of that area.

1738. I think I understood that their jurisdiction was with regard to surface drainage only?—Yes, that is so.

1739. Do they exercise that authority?—Yes.

1740. Have you ever come in conflict with them?—Yes, we are rather so at this moment. Our district is rapidly losing the character of an agricultural district, and becoming swarming, in fact, with manufactories and small houses, which spring up after manufactories; therefore land which was only arable land a year ago is now covered with small houses. The effect of it is, that ditches which are under the control of the Havering and Dagenham Commissioners for the purposes of surface drainage, and for the purposes of marsh land, and so on, for cattle, immediately houses get into the neighbourhood of course become nuisances. We do get into conflict. We say it is the fault of their system, and I am sorry to say that they retort and say it is the fault of ours.

1741. And between the two very little is done?—No, I cannot say that.

1742. Who does the work of the two?—I do not go down personally to see, but I know that our people are so thoroughly looked after, that I do not think there is any default on their part.

1743. Am I to understand that your people do the work which the Commissioners of Sewers ought to do?—The Havering and Dagenham Commissioners of Sewers say that they have nothing to do with nuisances, that that is not their business, and that the nuisances arise from our people not looking after them.

1744. Practically such a double jurisdiction is inconvenient?—It is inconvenient, but I do not know how in this instance it can be got rid of consistently with the duties which those Commissioners have for such a large area. They would be perfectly willing that we should be cut off, and that the whole of the sewers control in our place should be vested in us, if it were not that if our people failed to do their duty it would affect the whole district with regard to letting in water from the Thames and looking after the river banks, which are part of their jurisdiction.

1745. But supposing that they had the power to require you to do the work, would you see any objection to it?—I know it would be very unpleasant to our board. Perhaps I have not sufficiently called attention to the fact that three members of their body sit upon our board as delegated members to look after their own interests.

1746. *Ex-officio?*—Yes.

1747. Under their Act?—Under an order in Council, and a further Act of Parliament incorporating that order.

1748. In your Act are there special provisions to meet their case?—Yes, as far as the delegation of three members at that board who sit as members of our board.

1749. Do those Commissioners of Sewers levy a rate over all the district?—Yes.

1750. Do they make a separate assessment or not?—I do not know at all.

1751. Have you paid it yourself?—Yes.

1752. Have you paid it to the same collector?—Not to our collector, but to a collector appointed by the Board of Commissioners.

1753. They would make a separate rate themselves, would they?—Yes, they would make a separate rate themselves entirely over the whole district.

1754. There are, in fact, for sanitary and drainage purposes, two distinct bodies over your district?—I would say that they were not for sanitary purposes at all; their appointment is a very old one; certainly long anterior to anything like the passing of the Sanitary Act; it is for surface drainage purposes and to protect the banks of the river Thames and the banks of the river Lee, and keep back the water.

1755. Do you yourself see any objection to giving them the power of requiring you to do the necessary works of surface drainage, and in default of your doing it, that they themselves should do it?—No, I see no objection to it.

1756. (*Mr. Bircham.*) You had considerable experience in 1867 of the epidemic in your district?—Yes, we had.

1757. Did that bring under your notice any defects in the working of the Public Health Acts?—No, except this, that at that time the body specially appointed were the guardians, and that brought us a little into not hostile contact with them, but there were awkard questions arising as to jurisdiction. We set our men, for instance, at work, and we got as our inspectors appointed by the guardians some of their officials, in order to justify them in taking the steps which that legislation provided for, such as going into houses and rapidly burning affected things.

1758. Then there was some conflict of authority between your body and some other body at work in the district as to what was necessary to be done with reference to the public health?—Undoubtedly in the sense that one body had certain powers, and another body had certain other powers, but there was no conflict in the sense of being in opposition, because both bodies acted very harmoniously together.

1759. Have you anything to suggest which would induce greater convenience in the working out of those matters?—I think I might, but I should say that I did not know one word about giving evidence before this Commission until about 10 days ago. There were a great many thoughts that flitted across one's mind occasionally, but I have not had the opportunity of putting them into any shape.

1760. Have you a great many small tenements in your district?—Yes, a great many.

1761. And a great many not receiving an adequate water supply?—I fear that is so; but then we have great complaints to make against the East London Waterworks Company. We are constantly at issue with them.

1762. Have you any experience of the working of the 75th section of the Public Health Act, which gives the local board power to require houses to be supplied with water?—No. We have thought of it several times, but our rates are so heavy at present that we have always been frightened at the idea. It has been suggested to bring the Grays water to our place.

1763. I wanted rather to call your attention to this, whether there was anything defective in that section which you could suggest the amendment of?—That is a point which has not been brought under my notice, and I could not off-hand give an opinion upon it. I may say one thing certainly which has been brought under my notice in connexion with it. The Board of Health has the power, where a supply can be obtained not exceeding 2*d.* a week, to order the owner of the premises to have it laid on; but it is much like the case of roads. We have to give him notice to do it, and if he does not do it we have to do it at the public cost with the chance of recovering it from them. There ought to be the power given, I think, as we now have by our Local Act taken from the Metropolis Act, that in case the owner does not do it we should summon him before a magistrate, who should inflict a penalty upon him for not doing it. Our only remedy at present is to do it ourselves, and then look to a man who may turn out to be practically a pauper to recoup us for improving the man's own property.

1764. Have you been brought in contact with cases where houses unfit for human habitation are inhabited?—A few, not many.

1765. Is it your opinion that any inspection with a view to the licensing of houses before they are inhabited would be useful?—We have that practically now under our byelaw; it is not in the general law, but we have a byelaw.

1766. How does the byelaw affect that?—A certificate by the surveyor is necessary before any house can be occupied, and if any house be in occupation and it is reported by the medical officer or the surveyor to be unfit for human habitation, we then can give notice requiring it to be closed, and that any person occupying it after a given time is liable to penalties.

1767. Is there a penalty upon the occupier?—It is a penalty upon the occupier for occupying, as well as on the owner for letting.

1768. Do you think that any legislation to prevent the recovery of rent in cases of houses certified to be unfit for human habitation would be salutary?—In a measure it would, because of course it would be the interest of the landlord, who at the present moment is not very desirous to get rid of his tenants; we have found in the case of cholera a great difficulty in getting rid of tenants.

1769. (*Mr. Powell.*) You spoke of the Commission of Sewers; can you inform us what was the origin of that commission?—No; but I know that it is certainly an ancient one. I cannot give any information of a reliable character upon it.

1770. What is the date of your Local Act?—1867.

1771. Can you inform us whether there is in your

district a considerable attachment to that Local Act, and a corresponding reluctance to fall under the general Act of Parliament dealing with sanitary matters?—Perhaps I have rather over-stated the character of our Local Act; it was only an Act for the purpose of getting rid of certain technical difficulties for the erection of a town hall; and also we then took an opportunity of getting a few of the clauses of the Metropolitan Act incorporated with our own Act.

1772. The byelaws to which you made reference were simply under those clauses?—Under those clauses simply.

1773. Have you found any difficulty in the working of the local authority from your near neighbourhood to the district of the metropolitan board, you yourselves being outside the board?—No.

1774. You were anxious to be taken into the main drainage system, were you not?—We were placed in a very considerable dilemna last year, and to get taken into that system in one degree tended to relieve us. We were therefore anxious that we should be taken into that system simply because it got rid of still greater difficulties. I believe now it will be thought perhaps to be the most economical mode, but they have always repudiated it, and have told us that their system was not large enough for themselves.

1775. Did you go so far as to bring in an Act of Parliament with a view to being admitted to that system, or did you only make application to them?—We have only made application to them.

1776. One part of your district is called Silvertown, is it not?—Yes.

1777. Did not that locality make some effort last session to be separated from you?—Yes, they did. They had applied to us to drain them for a long time, but our difficulty lay in the fact, that in order to do so we should have had to have brought their drainage at a cost of at least 10,000*l.* to our present pumping station on the river Lee. We practically had got notice to quit that station, and we therefore said to those people it is great folly our expending that 10,000*l.* in draining your district, because, for aught we know, we may be compelled to remove our pumping station, and the pumping station may be removed very near to your district; we, therefore, want you to wait a year or two until that question is practically settled, and then we will drain you. The people would have waited willingly, but there were a variety of building societies who had purchased up the land, which was rather swampy, and who could not get it drained without our draining it, to whom it was therefore of great importance to get an Act passed as speedily as possible, perfectly reckless as to whether it cost 10,000*l.* or 20,000*l.*, and they were the promoters of that scheme.

1778. Was that a scheme to discharge their sewerage into the Thames at Barking Creek?—Their scheme was to enable them to unite with North Woolwich, and to have a scheme of drainage of their own.

1779. You had a strong objection to that part of your district which paid you a considerable amount of rate being separated from you?—Exactly.

1780. And you opposed their Bill in Parliament?—Yes, we opposed their Bill in Parliament.

1781. And was the expense of that opposition charged upon the local rate?—Yes.

1782. Should you be of the opinion which has been expressed by previous witnesses, that before a district goes to Parliament to get powers of that exceptional character it should have the consent of the Secretary of State?—I certainly should; but in this particular instance I should mention that they did go before Mr. Gathorne Hardy under the 49th section of the Sanitary Act of 1856 to enable them to be constituted a sanitary district, and Mr. Gathorne Hardy told them that they had not made out their case, upon which they went to Parliament for a Bill, which was referred to a committee, of which you were the chairman. We were united so far as our interest was concerned, but the committee introduced clauses into that Bill enabling us to continue on our then pumping station on the banks of the Lee, provided we clarified the discharged sewage. The effect of this was so great a benefit to to us, that we immediately gave an undertaking to drain Silvertown, and we are now in progress of carrying it out. There was one difficulty, that if the committee had passed that Bill in the shape in which it was introduced, the effect of it would have been to have removed the pumping station at West Ham entirely somewhere further down, in which case we should have taken Silvertown on our way; so that until the question was settled we might be incurring an expenditure of 10,000*l.* for draining Silvertown in this way, when within a year or two afterwards we should have wanted to have gone the other way. That was our objection.

1783. (*Mr. Cave.*) Do you pump now into the Lee?—Yes, we pump into the Lee.

1784. At the end of two years you will have to clarify your sewage, will you not?—At the end of two years after receiving notice.

1785. Will you state a little more distinctly the amendment which you propose in the law with regard to water supply?—It was merely as to a point of detail. I was asked whether I had any suggestion to make upon the subject, but it was not a point to which I had addressed my attention before coming here, and one suggestion only occurred to me, which was to alter the law in that particular respect, namely, that at present where water can be supplied at a price not exceeding 2*d.* a week the board can call upon the landlord to have that supply laid on; but if he makes default, all that the board can do is to do the works for him and charge him with them; but frequently in the case of this small property the owner is a poor man himself, so that in fact the money of the ratepayers has been expended in improving his property. The provision which I would seek to apply is this, that if the owner does not comply with the order I would have him summoned before the magistrates, and give them the power to impose penalties, and not that the parish should improve his property at their own expense.

1786. How would that affect the object of getting a water supply?—Inasmuch as the owner being subject to penalties if he did not lay on the water, he would lay it on for fear of those penalties.

1787. Do not you start with the idea that he is insolvent and incapable of doing it?—No, I do not start with that idea; but I know that very often in those cases he may not be so poor, but we cannot get hold of him; we have a difficulty in finding him, and a difficulty in serving him with those notices and in getting the money from him.

1788. Would not that same difficulty arise with regard to the penalty?—No; we have found that very often when people are compelled to do a thing under a penalty they do it, when they would not do do it if the only consequence was that we had to do it for them; they would leave us to do it for them, and would take the chance of being afterwards compelled to recoup us.

The witness withdrew.

Adjourned to Monday the 31st instant at 1 o'clock.

Monday, 31st May 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, BART., M.D., F.R.S.
Lieut.-Colonel EWART, R.E.
SAMUEL WHITBREAD, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JAMES PAGET, Esq., F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

J. Simon, Esq., F.R.S.

31 May 1869.

(11.) JOHN SIMON, Esq., F.R.S., examined.

1789. (*Chairman.*) Will you state what your present office is?—I am medical officer of the Privy Council.

1790. How long have you been so?—I have been in that office since 1858, when by an Act of Parliament, for which you, sir, were particularly responsible, I was transferred from the then expiring Board of Health, with which board I had been connected for the three previous years, having been appointed to the Board of Health in 1855.

1791. Whom did you succeed in the Board of Health?—There had previously been no such official.

1792. You were the first government medical officer, both under the Board of Health and subsequently under the Privy Council?—I was; but, perhaps, to prevent a misunderstanding, I should say that for a part of the duration of the general board of health, though there was no person holding an office similar to mine, there was a medical member of the board, Dr. Southwood Smith.

1793. Did he cease to be so when you took your office?—He ceased at least a year before I took office. I think in 1854.

1794. Will you state generally what changes your office has undergone?—There was a period of four years during which the Board of Health was moribund. In 1854 the constitution of the Board of Health was altered, and the responsibility to Parliament for the proceedings of the Board was vested in a President. In 1855, as I have stated, I was appointed under the new constitution. The first President of the Board of Health was Sir Benjamin Hall. The office was filled by Mr. Monsell, and afterwards held, as an unsalaried office, in conjunction with the Vice-Presidency of the Education Office. Mr. Cowper holding the latter office, held also the presidency of the Board of Health, without salary, and that led the way to the transfer of my office to the Privy Council, which was made in 1858. At first Parliament probably had not quite made up its mind whether there should be any permanent arrangement for the supervision of public health, and the Act of 1858 was a temporary Act, but in 1859 it was made permanent. Then I worked on until 1861 without change, but in 1861 Lord Granville and Mr. Lowe, who had then been two years in office, thought it desirable that the work should be thus far changed, that I should become their administrative officer for health purposes. They passed a minute for that purpose, and I have been acting consequently for the last eight years in a considerably larger sense than was anticipated when I took office in 1855, or when the office was changed in 1858.

1795. When that change took place, making you an administrative officer, did it enlarge your functions?—Very much indeed; that is to say, I have been acting as secretarial officer in addition to acting purely medically.

1796. In that change you retained all your former functions with new ones added?—Yes.

1797. Except that by the Act of 1858 the expiring Board of Health's functions were transferred to the Council, is there any other reason that makes the Privy Council a suitable office for your functions?—I suppose one office would do as well as another, and provided that the subject matter gets well represented in Parliament, it scarcely matters whether it is in one or in another of the other offices that have to do with home affairs. But perhaps there was this special reason for the transfer to the Council Office, that the Council Office had in old times been supposed to look after the public health and was the quarantine authority.

1798. Do you suppose that the reason of that was that proceedings relating to quarantine are generally done by Order in Council?—Yes, I suppose that must have been the reason.

1799. You know no other reason to make the Privy Council a specially good office for your functions?—No. At the time there was a belief that the Home Office was too over-burthened to undertake it.

1800. Do you act in conjunction now in any way with the local government department of the Home Office?—In no regular way. I am of course frequently in communication with the Local Government Act Office, and on other Home Office business papers are occasionally referred to me.

1801. Do you mean in case of epidemics?—No, the Home Office has nothing to do with epidemics.

1802. What sort of papers are referred to you by the Home Office?—For instance, I have on my table, at the present moment, a paper, referred to me from the Home Office, on the question of the constitution of the general council of medical education.

1803. In fact, I suppose Bills which are originated in the Home Office, if they refer to medical subjects, are referred to you?—Latterly that has been so.

1804. Have you any inspectors under your orders?—First there are inspectors whom I may in short call vaccination inspectors, as employed almost exclusively in vaccination. I do not call them exclusively vaccination inspectors, because it is part of the understanding of the office that if they are wanted for any other purpose they shall be utilised for that other purpose; but in point of fact they are employed very nearly exclusively with reference to public vaccination, except that the senior of them, Dr. Seaton, acts for me in my absence. Then, there are, secondly, two inspectors for general sanitary purposes, who have nothing to do with vaccination; and there is an inspector of the lymph supply of the Vaccine Establishment.

1805. What total number of inspectors does that make?—Seven. There are two general sanitary inspectors, Dr. Buchanan and Mr. Radcliffe. The inspectors specially for vaccination are Dr. Seaton, Dr. Stevens, Dr. Wiltshire, Dr. Hunter, and Mr. Wagstaffe; but the last two give only half time, so that you might add them up and they become only one inspector; thus we may say four inspectors for vaccination; besides whom there is the inspector of the National Vaccine Establishment, Mr. Tomkins; and there are the two general sanitary inspectors.

1806. Are all of your inspectors medical men?—Yes; all of them.

1807. Have you any occasion from time to time to use in any way the inspectors of the Local Government Office in investigations?—Not often; our provinces of work are very distinct, and it is rarely that a case arises for concurrent action.

1808. The distinction generally is that yours are medical inspectors and theirs are either engineering inspectors or inspectors for general purposes?—Engineering essentially.

1809. Will you state what you consider are the faults of the present system of Sanitary Law and

administration?—There are faults of incompleteness, but they are small faults in comparison with the faults of confusion. The state of the law, in relation especially to local authorities, is chaotic.

1810. Will you state in what instances the law is so confused?—On the most favourable construction of the law at present, I suppose we may say that in all country districts there is one authority for every privy, and another authority for every pigsty; but I also apprehend, that, with regard to the privy, one authority is expected to prevent its being a nuisance, and the other to require it to be put to rights if it is a nuisance.

1811. What are the two authorities that you allude to?—The vestry for the privy and the guardians for the pigsty.

1812. The one being under the Nuisances Removal Act and the other under the Local Government Act?—Certainly the pigsty is under the Nuisances Removal Act; of that there is no doubt; and then the privy is to some extent, but, as I read the law, not entirely, put under the vestry by the Sanitary Amendment Act of last Session.

1813. Can you give us any other instances of the confusion of the law?—Perhaps if I read a letter that I received from Watlington this morning it may illustrate the case. Watlington is in the Henley Union. We had to inspect it on account of complaints made of danger to public health, and the local sanitary administration was about as bad as anything could be. A vestry meeting had to be called, it being a question whether proper drainage and proper water supply were required; but the anterior difficulties were considerable. We wrote but got no answer. We wrote, of course, to the vestry clerk, and we presently found that there was no vestry clerk; then we addressed a letter to the vicar, and at last the vicar got a meeting, and here is his answer.

1814. Will you first state under what Act you made those inquiries?—Under the Public Health Act of 1858, the 21st and 22nd of Victoria, chapter 97, the Privy Council may cause to be made, if they see fit, inquiries upon any matter concerning the public health. Here is the vicar's letter:—"Objections were raised by Mr. Viret and Mr. W. Wiggins as to the meeting being a vestry within the meaning of the Acts of Parliament, which were answered by Mr. Gover from a circular issued by the Poor Law Guardians, bearing upon the subject. After much discussion it was moved by Mr. Viret, and seconded by Mr. W. Wiggins, 'That all the correspondence and papers, including Mr. Gover's letter to the Privy Council, be 'referred to the Board of Guardians at Henley, as 'the sanitary authority for the parish of Watlington under the existing laws, with a request that 'the Board will call upon their Medical Officer and 'the Inspector of Nuisances to inquire into and 'to report upon the matters complained of.' An amendment was moved by Mr. Gover, 'That a 'committee of twelve ratepayers be appointed to 'carry out the duties of the vestry as a sewer 'authority;' but no member offering to second this amendment it was not put to the meeting. The original motion was then put and carried. In explanation of the above account, I must add that Mr. Viret, who is a magistrate and *ex-officio* member of the Henley Board of Guardians, stated to the vestry that he was himself in communication with your office, and had been informed therefrom that the guardians were the proper authority to act, or something to that effect," (we had stated the contrary,) "and in presence of this seeming conflict of authorities it was difficult for the vestry to know how to proceed. The great majority of those present did not vote at all upon the question. Under the circumstances I am myself perplexed as to whether it is my duty to carry out the intention of the resolution passed by the vestry." That is a paper which came in this morning, but we have been constantly having before us cases of this sort, more or less illustrating the chaos. We are asked questions which we are totally unable to answer, as to what are the limits of duty of the two authorities.

1815. The Act you refer to under which this correspondence proceeded was an Act which gives power generally to the Privy Council for sanitary purposes, and transfers to them the powers of the Public Health Board which expired that year?—Yes.

1816. Is there nothing in the Public Health Act which would make it clear what was the local authority responsible in that case?—Under Mr. Lowe's Nuisance Act of 1860 the board of guardians was made the universal nuisance authority of last resort, namely, the authority, in all places which were not special health districts, with local boards of health, or municipal bodies; but then in 1865 there was started a new authority, a sewer authority, distinct from the nuisance authority, and that sewer authority was to be the vestry. Some uncertainty of jurisdiction was probably inherent even in 1865 in the creation of the new sanitary local authority, though this did not reach its climax at once; but after a while further legislation completed the difficulty by giving to the new sewer authority nuisance functions superadded to its constructing functions. In addition to being the authority for sewers and water supply it was made by the Act of last session the nuisance authority to a certain extent—I can not understand to what extent, but to a certain extent, for privies. And that is the position in which matters now stand.

1817. Am I not right in saying that under the Act of 1858, there would, in country districts, have been no authority, but that authorities have been created by the Nuisance Removal Act, and under the two Acts, of 1860 and 1865, which alone have created any authority at all in a country district, and have produced a conflicting authority?—The confusion culminated under the Act which vested a certain quantity of nuisance authority in the vestry. That Act was the Act of last session; but some confusion may have begun as far back as 1865, when the duplicate authority was first created.

1818. Was not the confusion to which you allude created by the Acts subsequent to 1858?—Yes.

1819. And at the time when that Act of 1858 was passed there could have been no dispute whatever?—None.

1820. So that the confusion in this case has arisen from the multiplicity of Acts which have been passed since?—Yes.

1821. Is there any other signal instance of the conflict either of law or of authority which you would wish to state to the commission?—There are many difficulties in the law, which no doubt would be better put before the commission by a lawyer than by me. For instance, it is difficult to know who are the local authorities in parts of parishes when other part is under the Local Government or the Public Health Act.

1822. Do you refer to combined districts?—No, not to combined districts.

1823. Do you mean where the district takes in a town and a portion of the country round?—Where a parish is in part under the Local Government Act, but in another part is not under it.

1824. Have you formed any definite opinion yourself generally as to which is the best rural sanitary authority, the board of guardians or the vestry?—That question seems to have been to some extent answered by experiment. We began with parish authorities; the Act of 1855 had parish authorities, and they slipped through the fingers, you could never catch them; and then in 1860, under Mr. Lowe's Act, the law was altered to make the board of guardians the local authority for places that had not special health districts. That was a tangible and permanent authority, an authority that had a clerk, that had a regular place of meeting, that had medical officers and so forth, and it was felt to be a great gain. Under the parish system it had been obligatory that every parish should appoint a sanitary inspector, but this obligation

had remained a mere dead letter, and when the House of Commons ordered a return as to how many parishes had appointed sanitary inspectors it appeared doubtful whether a large number of parishes had even heard of the law, or had any notion of its existence. A large proportion of them did not answer the circular at all, and all appeal from the Government to them was so much shooting in the air.

1825. Is it your opinion that for two reasons the board of guardians is preferable to the vestry; one, that it is a more definite body, and secondly, that it represents a larger area and is therefore more likely to be cognizant of the law, though both are corporations for this purpose under the 29 & 30 Vict. c. 90. s. 46?—Its covering a larger area is perhaps in itself a disadvantage. If you could hope that the parish authority would be really a tangible authority, I should say that there was an advantage, for many purposes, in the smaller area; but I am afraid that that is hopeless, and if hopeless then I think clearly that what one must aim at is to get the board of guardians (subject to the very important qualification which I will state directly) to be the local authority; but its power of acting through committees would require very great development I think, and to be very well considered and made very complete. But I said that there was a qualification which I would ask to put in as regards the board of guardians being the sanitary authority, and it is this: that the board of guardians should not be that authority *ex officio*. I think it a great misfortune to have so very important an interest as that of health administered *ex officio* by people who are appointed for other duties. And if it is the opinion of the Commission that the board of guardians should be the common authority for health purposes where there are not special health districts, I would suggest that their constitution as a board should be for all purposes of local government; that they should not be elected as a board of guardians and act *ex officio* for health; but that their election should be as a compound board for health and poor law relief.

1826. When you use the word *ex officio* you are not alluding to the *ex officio* members of the board, but you think that the board being elected for one purpose, namely, the administration of the poor law, are not therefore fit for another purpose, namely, the superintendence of the laws of health?—They may be quite fit for it, but they are not elected for that purpose, and I think that the purpose of health ought to be contemplated in their election, and that they ought not to be able to say, as boards of guardians over and over again have said "We are not elected for these "health affairs; we do not know anything about them. "We are elected for something quite different, and "it is very hard that this should be thrust upon us in "addition to our primary duties." And what I would aim at, if a board of that sort is to act for health, is, that it should be part of its original appointment so to act.

1827. You have very strong views, have you not, as to the importance of a central authority in London?—Yes, I have the strongest views about that.

1828. Will you state to the Commission first your opinion as to any intermediate authority being constituted between those boards of guardians and other local boards, and the central authority in London?—I do not think that there should be any intermediate authority. I think it quite possible that for certain health purposes, other than those of the Nuisance Law, there should be a different class of authorities. We have a local authority for lunacy in the magistrates, and it is quite possible that that same authority might advantageously act for some special health purposes, and also where the administration is to be over a larger area than that of unions. It is possible, for example, that they might be the best authorities for a good many commercial interests of health which require to be attended to. But for the administration of the Nuisance Law as it is, or in the more developed form which I hope it will take, it seems to me that there ought to be no successive local authorities, that there should be but the one responsible local authority and the central government authority to look after it.

1829. It has been suggested to the Commission that the county financial boards which are in process of formation, the Bill being before Parliament, which would be partly an elective and partly an official body, might be a useful intervening authority between the local boards and the office in London, but you are decidedly of opinion that no such intermediate authority is necessary?—Very strongly; it would be a mere buffer, and you want to act as directly as you can if you are at all.

1830. Will you describe what you think the central organization should be, which, according to your views, would be able to preside over all the kingdom, and yet be efficient in each locality?—The central organization would involve that the minister should thoroughly know the state of health in all parts of the country.

1831. By the minister do you mean the Home Secretary of State?—What minister is to have charge of the matter, is, perhaps, a separate question, but the minister, whoever he is, should be in possession of knowledge scientifically and properly interpreted as to the facts of health and disease throughout the country. We are a long way from that at present.

1832. Do you mean that he should be informed by means of a body of inspectors?—Not in the first instance by inspectors. Inspectors would in certain cases be necessary, but first of all he should have before him returns. We have at present returns which are very admirable to a certain extent. Although there are deficiencies which I will refer to, there is an admirable organization for returns of death under the Registrar General; but we have no returns of sickness. Then the returns of death made to the Registrar General are necessarily imperfect. The law does not provide that the cause of death shall be medically certified, and in consequence of that defect of the law all sorts of cock and bull stories are told about the causes of death. We had to make an inquiry on one occasion as to the supposed very large prevalence of phthisis in some of the South Wales counties. We had been inquiring about phthisis in many parts of the country, and had been able often to trace its prevalence to particular industries; and since then we have been able to trace a good deal of the local prevalence of phthisis to the influence of soils; but on this occasion we were told that there were no particular local influences which we could suppose to be concerned in producing phthisis. An inquiry was made, and it turned out, that this great appearance of phthisis in the death registers depended upon the fact, that the causes of death were only exceptionally certified by medical men. I remember that in one case only 15 per cent. of the deaths had been medically certified. The non-medical certifiers of death thought that "consumption" was a good word to cover death generally, so that any one who died somewhat slowly was put down as dying of "consumption," and this appeared in the Registrar General's returns as phthisis.

1833. Do you think that the Secretary of State would be equally able to enforce other sanitary laws of local government, as well as those specially relating to medical subjects? By other sanitary laws I mean such as nuisance removal, smoke consumption, and all the various subjects which are under the local government office?—I think that the administration of the nuisance law in the largest sense of a nuisance law, and including everything that you could properly call a nuisance, might properly be with him, if he were medically advised.

1834. Is your proposition in fact to revive the old Board of Health?—No.

1835. What would be the distinction between the central authority, which you propose, and the old Board of Health?—It seems to me that there must be a medical department like the one that I have to look

after; a separate department of which the chief officer is medical, acting as superintendent general for health; acting immediately under the minister, to whom he is responsible, whichever minister it is, whether the heads of the council office or the Home Secretary; not fused with any other office. You may remember that in the old Board of Health the engineers to a considerable extent dealt with matters of medical opinion; there was very little medical inspection, except in times of epidemics.

1836. When you recommend one central consolidation of authority, and also deprecate any intermediate bodies, in both those recommendations you are principally referring, are you not, to medical subjects, and not to all local government powers?—As regards the locality I think there should be a consolidation, and I think that all improvement powers relative to health should be in the hands of the nuisance authority. I think it would be well if all local government whatever could be in one local authority, but I suppose that is not to be expected at present. I suppose that in towns at present the destitution authority is likely to continue separate from the local improvement authority, but the local improvement authority ought, I think, to have in its own locality all improvement powers; that is to say, it ought to have the burials, the baths and washhouses, the lodging houses, the labourers' dwellings, the sewers, &c., as well as the removal of nuisances; all those matters ought, I think, to be under the one local improvement authority; and, as I said, I should think it still better if the local improvement authority could be the destitution authority, but that may not be very likely. Then as regards the centre, I think that one chief ministry, either the Home Secretary or the Privy Council, should have under it all those subjects in their largest sense, and that there should not be, as there is at present, a division of sanitary responsibilities between the Home Secretary, the Privy Council, and the Board of Trade. There is the Board of Trade looking after the water supply of the Metropolis. In times of cholera epidemic, when there is every reason to suppose that the water supply is of the very utmost importance to the lives of thousands and tens of thousands of people, it is not in the Health Office, it is not in the Home Office, it is in the Board of Trade that that interest is supposed to be superintended. I think that both sorts of subject-matter, the subject-matter of the medical department, and the subject-matter of the Local Government Act Office, should be under one minister, but with two separate offices. I suppose that Mr. Tom Taylor's office, the Local Government Act Office, may be developed, and have more matter given to it of the sort that it now deals with; but it would still be essentially a Local Improvement Act Office, an office having to deal with local authorities in respect of construction and finance; that would not blend in the least with the medical work that we do; there is no homogeneity, no similarity of work or of material, between the two offices. But in the medical department there would be the supervision of health, an essentially medical supervision; the supervision of the returns of sickness and mortality, and advising on them; supervision of the administration of the Nuisance Law as tested by its results; the supervision of the working of the Acts relating to epidemics and all preventable diseases, to public vaccination, to commercial offences against health in adulterations of food, and other like offences, to the medical profession, to the practice of pharmacy, &c.; and various other like purposes.

1837. Do you think that one single minister in London would be able to be more than an appeal in such a variety of cases arising all over the kingdom; that is to say, would himself have the means both of being cognizant of all cases where the law was inactive in any parish in the kingdom, and also of enforcing the law where it was inactive?—I think so.

1838. What sort of machinery would he have to enable him to become cognizant of all cases in all the places scattered all over England where the law was inactive, and what machinery would he have to enforce the law when he found it to be so?—I suppose the proper form for the law to take, or the spirit of it, would be that he would interfere with local action only when the necessities of the public health made it necessary that he should interfere. At present the law is unfortunately so worded that he may be appealed to upon any individual dustbin; that of course is not a desirable state of the law, but if the form of the law were that in any case where it seemed to him that the public health was in danger by the maladministration or the nonadministration of the Nuisance Law he could take such and such steps, then the medical superintendent acting under the minister would look after all those matters in detail, and in all extreme cases would bring the matter up to the minister for action.

1839. Is there not a danger on the other hand that he might not be cognizant of the cases at all, and that nobody would bring them before him?—I think it would not be very difficult to organize a system which would enable him to know of all considerable outbreaks of fever. I take that as one case. There ought to be an obligation on the local authorities to report cases of that kind. I believe there is such an obligation with regard to diseases of cattle.

1840. Will you state generally what you think is wanted in the way of reform of the Sanitary Law and its administration?—The Public Health Law in the larger sense of the word has plenty of defects in it, but I believe that the Commission are not intending to go into the Public Health Law altogether. At any rate I confine myself to the Nuisance Law. I want to see it perfected. I think that it wants to be extended to some cases which hitherto have not been effectively dealt with; and that the authority ought to be simplified I have already sufficiently stated.

1841. In what sense do you think the Nuisance Law wants extension?—The pollution of rivers and the obstruction of rivers I think ought both to be made subject to the Nuisance Law. Again I should like to see a number of things that are matter of special legislation and of special prohibition brought into the statutory list of nuisances. For instance, in the Sanitary Act certain exposures of persons with contagious diseases are prohibited, and I would bring cases like that within the word "nuisance." I think a great simplification of the law would be produced if the list of nuisances which now include some half dozen sorts of things should be extended by much further enumeration. As I said the pollution of running water should be made a nuisance, and the injurious obstruction of running water should be made a nuisance, and the exposing of persons contagiously diseased should be made a nuisance. One could enumerate many such cases, but with this restriction; that for at least a large number of such nuisances there should be an appeal. At present trade nuisances admit of appeal. Any one can proceed under the Nuisance Law against a trade nuisance as a common nuisance; but the person proceeded against has the option of appealing to a superior court; and I suppose that that would be a plan on which one could greatly extend the summary jurisdiction power, reserving certain sorts of cases for appeal.

1842. When you say that the pollution of rivers should be added to the subject of the Nuisance Law that would be referring a larger subject to the nuisance authority, or would you extend the authority to meet the larger subject?—I think that the local authorities must have an almost unlimited power of combining, limited only by the sanction which ought to be requisite from the minister; and I think that the minister also ought to have power to enforce combinations for particular purposes. I do not see very well how a good system can work unless the minister has that power of requiring the authorities to combine for certain purposes.

1843. Combining both the areas and of course the authorities and the rating power?—Yes, of course.

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1844. Are there any other new subjects with regard to which you would suggest an extension of the Nuisance Law?—Under the Nuisance Law not any more occurs to me at present; but the Public Health Law generally, looking at it beyond the matter of nuisances, is extremely defective in regard of our unprotectedness against commercial frauds. I should like very much to see the law strengthened in that respect against commercial misbehaviour, especially against water companies; the irresponsibility of water companies for what they do is something abominable Also I should most earnestly wish to see in operation a General Buildings Act, with good sanitary provisions, both as to new buildings, and as to buildings which have become unfit for habitation.

1845. What do you mean by the irresponsibility of water companies?—That if they give us impure water, if they give us sewage polluted water, and in consequence create or greatly increase some epidemic some cholera epidemic, or typhoid fever epidemic, they are virtually unpunishable. Of course, no amount of punishment could make up for the harm done in such cases; and perhaps the mischief ought to be prevented rather than punished; but still, when it is done, one would wish also that it should be punished.

1846. That last suggestion of yours is rather an extension of the law in degree to a subject under it already, is it not?—I doubt if the water companies, except in London, are subject to much law, and the law in London is a very imperfect one.

1847. With regard to the subjects which are already under the law, have you any suggestions as to extended powers, such as the subject of sewage, drainage, the removal of nuisances, the control of buildings, overcrowding, and other subjects?—I think generally the powers are sufficient. If I were going over the list very critically there would probably be some additions that I should make, but generally, I think, the ground is pretty well covered. I was rather thinking in the direction of the adulteration of food laws, and questions like that. Of course, in any large dealing with the public health law one wants to see those matters dealt with, because they concern the public health very much.

1848. Have you any other suggestion as to the authorities being better informed for the purpose of sanitary administration as to births, deaths, and sickness further than you have already alluded to in the improvement of the registration system?—The medical officers of the local authority of course ought to have access to whatever information is in their district, in public or quasi public institutions, as to sickness; but that would usually be a matter of personal arrangement rather than one requiring absolute law. But it seems to me that it is as much or more with reference to the central government than with reference to the local authorities that this wants consideration. We want an improvement in the system of registration and returns of deaths, and we want a properly established registration of sickness. I am very strongly of opinion that all sickness which is treated at the public expense ought to be made known, and that we ought to know how much of each sort of sickness is so treated. At present we cannot know that, because there are no returns made. I am also very strongly of opinion that institutions purporting to be charitable institutions for relief of sickness or infirmity should be required to give an account of what they do; to keep records and make returns.

1849. What sort of charitable institutions do you allude to?—Any hospital, any asylum, any medical charity.

1850. The returns at present are defective, but do you think that by process of penalty you could make them more perfect?—There are none of a systematic kind that I am aware of. In some of the larger London hospitals of late years they have taken to publish annual reports, but those annual reports are done by each hospital as it likes; there is no concert between the hospitals, and the respective reports cannot well be collated with each other. Other hospitals than the London hospitals very rarely, I think, publish a record of what they do. What I think should be the case is, that all charities should supply a return annually in such form as the health minister, whoever he might be, should direct, of the cases treated and the results of the treatment.

1851. Have you any other remark to make upon the subject of the central authority?—The relation of the central authority to the local authority I suppose should be that of stirring it up when apparently it is in default of action, and in extreme cases to apply for a *mandamus* against it. That seems to be the essence of the action of the central authority in relation to the local.

1852. Did I rightly understand you to say that you did not think that they would want more inspectors for that purpose?—I think that they would want more inspectors.

1853. What sort of staff of inspectors do you think you would want to carry out your plan?—As I have stated I have just had two new general inspectors appointed, and I do not know yet how much ground they will be able to cover; but, as I have stated, our vaccination ground, which is a very detailed inquiry indeed, is covered by four inspectors. For general sanitary purposes, if there were four inspectors a great deal of work would be done, but I do not know that all would be done, probably not. I am speaking only now with reference to the nuisance law—it would be some such number as that. There might be six or eight, no very vast number, who would no doubt see very well to the administration of the amended nuisance law.

1854. I think most of your suggestions have reference to medical subjects; have you considered the possibility of uniting your department to that of the local government?—Yes, I have considered it, and I am satisfied that it would be impossible.

1855. You think that the departments must be kept separate?—I am sure they must be separate. There is no matter about which I have a more decided opinion than that.

1856. Do you never travel over the same ground of inquiry now?—Yes, but only in this way. Here is an epidemic of fever—we inquire into it, and we say this epidemic of fever depends upon the pollution of the water, or depends upon the absence of means for the removal of excrement. We are able to satisfy the local authority of the connexion of cause and effect; we trace it up to that point, and then the local authority is challenged to show how it can get rid of that nuisance. If they are prepared to employ an engineer, a skilled person, to advise them on the matter, there is no occasion for any engineer from the Government to interfere at all.

1857. Who in the first place challenges them to move at all?—The Health Office, who are able to connect the fever with the cause, and to affirm what must be the principle of the remedy. To attain the result there may be many different ways; there may be earth closets, or there may be scavenging, or there may be pipe drains, or other ways which I will not pretend to limit; and the Government I apprehend must be satisfied with the attainment of the end, whether by one of those ways or by any of the others. It is the absence of the nuisance that the Government has a right to claim; it has no right I apprehend to claim that the nuisance should be abated by pipes, or abated by carts, or abated by earth closets; it has simply to claim that the nuisance shall be abated. Supposing that the nuisance is not abated, Government enters on the second stage of the transaction; the Government then is empowered specifically to say, as you have not got rid of your nuisance, you must do such and such things.

1858. When you say the Government, what department do you refer to?—At present, the Home Office. I should address the Home Secretary, saying, This local authority does not abate its nuisance; will you take skilled advice as to the agency to be employed and order accordingly. The business then directly

becomes the work of a different office and a different class of officers.

1859. The object being precisely the same, is there any distinction in the process further than that you investigate the case medically, and that the Local Government Act Office, which is under the Home Office, has the power of compelling action and also has engineering agency? Why should not it be all in one office?—On that point, about the conjoint engineers and doctors, or engineers replacing doctors, I speak with a very vivid recollection of the inconveniences of the old system. When I came into the office, the health inquiries had been I must say very much discredited, and people who were pressing sanitary improvement had been accused of gross exaggeration. Inquiries had been made by persons not accustomed to medical work, and knowledge of those subjects was far less complete then than it is now; inquiries had been made by engineers, and diseases had been spoken of as preventable diseases, diseases that drainage would get rid of, which educated medical men would certainly not have ventured to tell the local authorities that drainage or any such thing would get rid of. The local authorities constructed works at great expense, but presently there would come one of those diseases; and then, in newspapers or in letters to the central authority, they would express themselves loudly and indignantly as to having been led into great expenses under false promises; that they had been led to believe that their mortality would fall 25 per cent., or whatever it was to be, at all events that it would fall very greatly; that they had done all that they were told, but in spite of their doing all that they were told, here they had got small-pox again, or scarlet fever again, or measles again, or whatever it might be; and a very uncomfortable feeling was excited throughout the country by those statements. The real underlying truth of the good which can be obtained through preventive medicine was for years in discredit. I think if that sort of thing is to be guarded against, each department must do its own work; the doctors must do their work, and be responsible for correctness in their department, and the engineers similarly must do their work and be confined to it. It must be remembered too that only a limited portion of my work adjoins the engineering province of the Local Government Act Office.

1860. For instance, speaking of yourself and Mr. Taylor, might you not both follow your own particular line, one the scientific medical line and the other the engineering line, independent of each other, but in the same office, and by that means very much economise the machinery?—I do not see what machinery could be economised, for the two systems are essentially different, But, as I have said, I am entirely of opinion that our two offices, though separate from one another, ought to be under the same minister, and I think it is common sense that we should be so.

1861. Do you not very constantly have to consult each other upon the same subject, and having the same subject of inquiry, ought you not, not only to be under the same minister but under the same roof?—That also, I think, is an advantage, and certainly a pleasure.

1862. Would there not be great economy in correspondence, and in fact a saving of a good deal of official work by your both being in the same building and under the same Office, namely the Home Office?—I think that sometimes there would be. I hope thatI have made myself clear as to this point, that I thoroughly assent to our being under the same minister. I think that that would be a great advantage. I think that there are three departments which ought to be under the same minister. The Local Improvement Office, (for I use a larger word than the Act of Parliament word for that office, because I suppose in the long run it will be the central office for all local improvement purposes) the Local Improvement Office, the Medical Department, and the General Register Office ought to be all under the same minister. Of that I have no doubt at all. But they could be managed separately as departments under different chief officers, just as they are managed now; the chief officer of each department coming into immediate relations with the minister.

1863. Under the head of medical subjects, do you include quarantine?—Of course I include quarantine in theory, but in practice our English quarantine has scarcely more to do with health than any other Custom House affair. Our quarantine system has to do essentially with commercial considerations. We do not have quarantine in any hope or expectation of keeping yellow fever out of the country; we have quarantine because if we did not keep up the show of the quarantine system other countries would quarantine us. I have nothing to do with it myself, at least nothing of importance to do with it. I am occasionally asked questions about it.

1864. Are you not the responsible officer on the subject of quarantine?—That is a very difficult question for me to answer.

1865. But is there any other officer?—There is no other central medical officer.

1866. Have the Board of Trade anything to do with quarantine, except incidentally?—The Board of Trade is, I believe, habitually consulted by the Council Office on all quarantine questions.

1867. But the Orders in Council of course emanate from your office?—From the Council Office; that is to say, from the parent office as officered by the Clerk of the Council, not from the Medical Department of the Council Office. I have pointed out how difficult it is for me answer anything about quarantine, because all that is done in that matter is, I believe, without medical significance; it is done essentially for commercial reasons. There is sometimes active correspondence between the Council Office and Southampton, where there is a medical superintendent of local quarantine, and there is active telegraphing when ships arrive, and so forth; but I believe what is done has reference to the exigencies of commerce, and not to the exigencies of the public health of England.

1868. (*Mr. Whitbread.*) Are we to understand that you do not see that any alteration is necessary in the constituent bodies of guardians who should be in your view at the same time officers for the relief of destitution and officers for improvement purposes?—I do not know that any alteration is desirable.

1869. And you wish a certain number of *ex officio* members still to remain with a certain number of elected guardians?—Yes; the *ex officio* members would certainly be indispensable.

1870. About this central authority which you desire to see established over the area of improvement, do you think that that office should be an office of advice merely or an office of action?—For certain purposes it must be an office of action, that is to say, an office of regulation; but the ultimate compulsion to do the things that are wanted I think must not be with the minister, but with the Court of Queen's Bench.

1871. Is not that rather a roundabout way of getting an improvement made that the minister has to apply for a mandamus, as I understand you, to force any local authority to proceed? You have had some experience of ministers, do you think that practically the Home Secretary would apply for a mandamus to compel any local authority to proceed?—It seems to me that he would be more likely to do that than himself to construct drains. The knowledge of the existence of the power and the establishment of the precedent of a mandamus, would influence all the local authorities in the country very quickly. They would not willingly incur the expense of being proceeded against, and being brought into the Court of Queen's Bench, and they would be more disposed, I think, than in the absence of any such power, to listen to suggestions from the minister. Of course a mandamus would only be applied for in the last resort.

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1872. The Government at the present moment has certain compulsory powers in the matter of drainage and health, in your experience have they been often put in force?—Very seldom, I believe. Mr. Taylor, through whose office the Home Secretary exercises that power in relation to drainage, would of course be able to tell exactly in what cases they have been put in force, but I believe the cases have been very few. But then the law is hitherto very imperfect.

1873. When you say a few, have there been any at all?—I know that in cases which I have myself brought under the notice of the Home Office pressure has been put on the local authorities, and I believe that in various cases the local authority has begun to act under that pressure, without the Government having itself to construct the works. I am not aware that the Government has in any case constructed works. It has made orders, and if any such order is not obeyed, the Home Office can proceed to make the works. I believe that it has not yet in any case actually had to make works, but I am not certain. Mr. Taylor would of course know that better than I.

1874. You think that the health and the local improvement should be under the same local authority, but that they should correspond in two different channels before they reach the Home Secretary, that is to say, your office and Mr. Taylor's office could not be amalgamated?—If my department were subject to the Secretary of State, instead of to the Lords of the Council, the form of every outgoing letter, whether from the medical or from the local improvement department, would always be that it was written by the direction of the Home Secretary, and the replies of the local authority would be addressed to the department which had written.

1875. Precisely so; but the local authority whom you wish to combine for the purposes of health and improvement is to correspond through two different channels, and ultimately with the Home Secretary?—Yes; just as when two different under secretaries sign letters for the same Secretary of State.

1876. Those two secretaries are under the same roof and in daily communication with each other, and can take up any part of each other's work, but as I understand you think that your office could not be so amalgamated with the Local Government Office?—I suppose that in every Secretary of State's office there is a division of work amongst the under secretaries, and here there would be a similar division of work. The public would only see the Secretary of State, but by an arrangement interior to the office the Secretary of State would correspond always up to a certain stage in the transaction through the medical department, and, when it came to actual compulsion, would correspond through another branch of his office.

1877. *Chairman.*] Will you state under what conditions you think that the two offices of Health and Local Government might be amalgamated under the same roof?—We are under the same roof now, but our relations are not so very frequent.

1878. But you are in such relations to each other, are you not, that you can communicate virtually at any moment you wish?—Yes, at any moment. Here would be the difference; at present, if we correspond on the same subject, I write directed by the Lords of the Privy Council, and Mr. Taylor writes directed by the Home Secretary. If the transfer were made either way, we should both write by the direction of the same minister; and of course we should then have, as we now have, free personal communication whenever necessary.

1879. And also the places communicating with you again would communicate with you two through the same Minister?—Yes, quite so. It would all be Home Office business, or all Council Office business, as the case may be.

1880. *Mr. Whitbread.*] It would be a separate branch of the same department?—Yes; separate branches of the same chief ministry. And as regards local arrangements let me add this; I distinctly contemplate that if boards of guardians are to be the health authorities, the Poor Law would require amendment as regards the elections of guardians. Future elections should be not elections of Poor Law guardians, who would then *ex officio* act for health, but should *ab initio* be for a double purpose; namely, to act in the relief of destitution and for the public health. Of course it is understood that I am speaking of country districts which are not special health areas.

1881. You think that under the removal of nuisance law the damming of running water should be specified as a nuisance; do you mean all running water under any circumstances?—I am very well aware that the thing could not be put into law in that unconditional form; it would want a good deal of qualification; but the principle which I would aim at is, that any damming of water which causes inhabited upper land to be water-logged should be a nuisance.

1882. You say that exposing persons contagiously diseased should be a nuisance; have you ever considered to what extent you would carry that?—The words in the Sanitary Act of 1866, at section 38, are "Without proper precaution," I think. Some such words as those, one would use. The words of the section are, "Any person suffering from any "dangerous infectious disorder, who wilfully exposes "himself without proper precaution against spread- "ing the said disorder in any street, public place, or "public conveyance, and any person in charge of one "so suffering, who so exposes the sufferer, and any "owner or driver of a public conveyance who does "not immediately provide for the disinfection of his "conveyance after it has, with the knowledge of "such owner or driver, conveyed any such sufferer, "and any person who without previous disinfection "gives, lends, sells, transmits, or exposes any bed- "ding, clothing, rags, or other things which have "been exposed to infection from such disorders, shall "on conviction of such offence before any justice be "liable to a penalty not exceeding £5." Then the 39th section says, "If any person knowingly lets any "house, room, or part of a house in which any person "suffering from any dangerous infectious disorder has "been, to any other person without having such "house, room, or part of a house, and all articles "therein liable to retain infection, disinfected," he shall be liable to certain penalties.

1883. There are considerable penalties, are there not, for any such action?—Yes.

1884. Do you propose to strengthen the Act in that respect?—Not necessarily so; but I would take the offence as stated here and make that offence one of the several "nuisances" under the Act. In my notion, the amending of the nuisance law in an important particular would be this,—that the local authority, with the approval of the Secretary of State, or the Secretary of State acting for himself, should have power to make regulations with regard to nuisances that are apt to recur or be habitual. Cases of this kind are very difficult to be dealt with in Acts of Parliament; but regulations might, I suppose, be very easily made applicable to them.

1885. Do you think that the country is likely to give the Secretary of State power to make regulations of that sort without the sanction of an Act?—The country has given him that power for protection of money interests in respect of cattle.

1886. With regard to those two clauses, have they been operative or not?—Certainly not much. I have lately heard of some proceedings, but not of much. The Commission cannot but see at what disadvantage all this health-legislation has been in regard of organization and authorities. It has all been in a most desperate state of confusion. Principles are affirmed, and the principles that are now affirmed in our sanitary law are invaluable. Nearly all the great principles that one wants to have affirmed are there, but the neeessary organization and authorities are non-existent.

1887. In the 40th section you will see that the guardians are to be the local authorities for executing

this very Act which you said in your last answer is one to which you attach real importance, although hitherto you have found no means of putting the authority in motion?—The authority is not bound to have any sanitary officers.

1888. The law is sufficient, but you cannot get it at present administered?—That is about the state of the case.

1889. (*Sir Thomas Watson.*) Is not the department of knowledge which relates to public health a branch of medical science quite distinct from that which relates to the cure of diseases?—Yes.

1890. Would you not expect that the solution of the problems which arose out of that department would be more easy to those who have had an ordinary medical education?—Undoubtedly.

1891. And it is with this public health, or as sometimes it is called State medicine, or *hygiène publique* in France, and with this alone, that the Privy Council concerns itself?—Exactly.

1892. Has that science of public health been long recognized or cultivated as a district science in this country?—It has been cultivated under the auspices of Government only very recently. Of course there were important contributions to the knowledge of public health before the year 1848, but it is only since 1848 that the Government has taken much interest in the matter, and the more important investigations have been, I think, of much later date than that.

1893. Is not this branch of medical science hitherto in a rudimentary, or, at least, in an incomplete and imperfect condition?—Certainly.

1894. The proper and sole object of all legislative enactments relating to the public health should be the carrying into effect, in the most direct, effective, and economical manner, the teachings of medical science?—Assuredly.

1895. It is the business of the medical philosopher to furnish the principles of the science of public health; it is the business of the law maker to apply them?—Yes.

1896. Should you not expect, in fact, should you not feel certain, that the intelligent study and supervision of the operation of those sanitary enactments,—those which exist now and those which may be enacted hereafter,—would unquestionably lead to the detection of a still greater number of defects?—Yes, I think that that cannot be doubted.

1897. And to the suggestion of continual improvements in the science of public health?—Yes.

1898. I will ask you whether the supervision and the direction of those sanitary laws could be so efficiently performed by any other kind of person as by an educated medical man?—I am afraid that I am hardly in a position to speak impartially upon that subject, but I can very honestly say that if I did not think so I would be very happy to vacate my present office.

1899. Supposing that an office of so much trust and importance were allotted to a properly qualified man generally throughout the country, should he not be relieved by a suitable remuneration for his services from the necessity of providing for the exigencies of his daily life by the exercise of his ordinary profession, rather should he not be precluded from any distraction from his official duties, and be bound to devote himself entirely to those duties?—You are asking me with reference to local service. There are some very difficult questions of adjustment that arise here before one can answer that question. If the man is to act for a small area he will not have enough to do within that area in public functions to fairly earn a good livelihood from those who employ him. If he has a very large area his services would be worth a handsome salary, which would enable him to dispense with private practice; but then of course his services would be far less local, that is to say, they would be given far less in detail to each place.

1900. In large towns probably such an officer would be sufficiently remunerated for his official duties to render it desirable that he should have no other duties?—Yes, I have no doubt that it would be so in very large towns.

1901. Could it not be so contrived that certain districts within the reach of large towns should be included in those functions of his, so as to remove the difficulty that you spoke of, of employing a local functionary, who has not much to do officially?—Yes, I think that could be done; but however the difficulty remains of the appointment, and unfortunately that is a very great difficulty; the difficulty of patronage, and the difficulty of payment. There is no authority that I am aware of in existence acting over those larger areas, and it would be necessary to create an authority almost for the purpose of creating the officer.

1902. One thing has been forcibly impressed upon my mind since I have been attending this commission, namely, that in carrying into execution the existing sanitary laws one great difficulty has been the dread on the part of the ratepayers and others of the expensiveness of those laws. I would ask you whether you would not confidently expect that the beneficial effect of the official and instructed administration of what I would call state medicine upon the well being of the community would in no very long time much more than repay any expense which might be incurred by such medical supervision and administration?—I suppose that there would be a very great saving in the amount of sickness, if there were a good health administration throughout the country.

1903. Is it not likely that the prospect of obtaining such an office as I have alluded to, in which a man might make a decent reputable income, would produce a succession of skilled men, thoroughly qualified to discharge such professional duties?—It would tend in that direction, especially if at the same time security could be taken that the authorities would always appoint officers who were competent.

1904. There is a body of officers now existing, as we all know, whose business it is to watch over the interest and welfare of lunatics throughout the kingdom, is it not at least as desirable and necessary, while from the numbers concerned it is of immensely larger importance, that similar care and protection should be extended to the poorer classes of the community with respect to health, about which they are really as helpless as lunatics?—I certainly take that view.

1905. You have given some evidence with respect to hospital reports, and you are desirous that there should be information collected from them; the hospital reports that have hitherto been published have not been statistical reports, having any bearing upon the question of public health, but rather they have had relation to the treatment of particular diseases, is not that so?—Where they have in other respects been good their want of uniformity of plan has been an immense drawback from their usefulness.

1906. With regard to some of the difficulties which occur in practice, I should like to have the benefit of your experience. Taking for granted that a very large amount of disease and also a very large number of deaths are annually produced by what you have called excremental poisoning, and that this amount of death and suffering is produced by the pollution of the air and of the water used for drinking with human ordure, are you of opinion that the present laws for preventing this great evil are sufficient for the purpose?—To a great extent certainly they are not.

1907. Would you say that the laws are not sufficient, or is it that the enforcement of them is at fault?—If the enforcement is at fault, still that is a defect in the law, because the law ought to make the enforcement necessary.

1908. There were two or three very remarkable instances, which came before the Privy Council within a no very great number of months, of the prevalence of typhoid fever at Winterton in Lincolnshire, at Guildford in Surrey, and at Terling in Essex. Will you state to the Commission how and by whom, and

how soon, or how late after the commencement of that evil the Privy Council Officers had any cognizance of it?—Winterton had for seven years been almost always suffering more or less from the presence of typhoid fever, and for the last two or three years the disease had been of great local importance, before the facts were known to my department. Of the Terling epidemic we did not hear till it had reached its height. Very many epidemics either never become known to us, or are known only when they are ended. I can tell the Commission that when diphtheria came to England it had been prevailing in an epidemic form in parts of the country for two years before the Government knew anything about it.

1909. Then it appears from that that no reliance could be placed upon the knowledge and aid of medical men practising at certain places for the necessary information or alarm being given to the central authority?—In the present state of the law, none. There was to the best of my belief no public knowledge of the existence of diphtheria in England until it had been an epidemic for two years.

1910. Could you point out any way in which the early detection and extinction of those formidable diseases could be secured?—First, as regards sickness returns, I think that the sickness treated at the public expense ought to be reported quarterly to the Health Office. Secondly, I think that all medical charities ought to keep records to some extent on an uniform plan prescribed by the central authority, and to report summarily their statistics every year. Thirdly, as regards deaths, I think that the quarterly returns of the Registrar-General might be improved, so as to give the same information for the whole country once a quarter as is now given for the three millions of the Metropolis every week; that is to say, that the Registrar-General might give quarterly returns for each of the sub-districts of the country, as he now gives every week for each sub-district of London, stating in a tabular form how many deaths there had been during the previous three months from each of the more important zymotic diseases, typhus, typhoid, scarlet fever, small-pox, &c. I think that that would have a very important influence for good.

1911. You expressed a wish that there should be a registration of disease as well as a registration of deaths throughout the country; the registration of deaths is performed through the medium of medical men throughout the country, who receive no remuneration, I believe, for that duty; is not that so?—That is so.

1912. Would you impose upon them, without any remuneration, the additional duty of reporting the manifold cases of disease?—Certainly not; but I propose only to have the returns of those who are treated at the public expense; and of course great improvement in the health system of the country is not possible except at some additional cost. As to the Poor Law Officers of the country, I think it must be expected from them that they will, and they do in fact at present, make their returns to the boards of guardians; and the boards of guardians ought to be required to have certain broad results of these returns put in a tabular form every three months for the information of the Central Office and of the public. Thus we should hear every quarter with regard to each union of the country how many new cases there had been of this disease and of that of the more important zymotic diseases.

1913. I presume there would be some necessity for inspection arising out of your view of what would be the proper administration of the public health of this country?—Certainly.

1914. In your opinion, ought the inspectors to be, as in the case of the Lunacy Inspectors, itinerant, or stationary?—Itinerant, certainly. Not itinerant necessarily from London, but they would always be moving about in their districts. England might be divided into a certain number of inspecting districts or circuits, and the inspector of each district would be moving about from place to place in it, systematically as far as he could, but liable of course to be drawn off in particular directions if there happened to be any sudden necessity for his presence.

1915. (*Dr. Acland.*) You describe, in one of your valuable reports, five sanitary objects which should be incorporated in a Health Act; that was before the Sanitary Act of 1866, was it not?—Yes.

1916. Are you satisfied with the results of the Sanitary Act in these respects, and do you think that all the objects that in your public capacity you desire are incorporated?—Nearly so.

1917. You specially spoke, did you not, of the absence of special provisions for the regulation of such work-places as are not under the Factory Law?—Yes; the Sanitary Act of 1866 did a grand thing in that respect. I am better pleased with that being in the Statute than with any other one thing that has been done since I have had to do with public health. The provision has hitherto, I dare say, been almost inoperative; but there it is; the principle is nailed, and the thing will be properly worked presently.

1918. The next subject is the want of precision and efficiency relative to over-crowded dwellings?—There again immense progress has been made. Overcrowding as such is declared a nuisance, and the local authority, with the approval of the Home Secretary, is able to regulate the occupation and keeping of tenement houses. There is thus immense progress in principle, but we have been in chaos since then, so that it has not yet borne fruit. After the report of the Commission, we may hope to get an effective working of those things.

1919. The next matter is the absence of provision generally in the country against the construction of houses unfit for habitation; what has been done in that respect?—There the defect remains. There is a great want in the public health legislation. We want the conditions of building regulated.

1920. The next, I think, is the absence of reasonable restriction on the frequenting of public places by persons suffering from dangerous infectious diseases?—Yes.

1921. Then the absence of convenient local jurisdiction over the sanitary state of ships coming into relation with populous places?—That has been dealt with to some extent, but not very skilfully, and it will require, I think, to be dealt with again. The principles are all well affirmed. The ship is made subject to the nuisance law and the nuisance authority, but the thing does not work well.

1922. In truth those points require revision, do they not?—Yes, they do.

1923. In that same report, which is dated the 7th of November 1864, it appears that the medical officers of health of the metropolis sent you in a list of points in which they thought the law was deficient; do you happen to know if they are now satisfied, or if they still make complaints with respect to their powers?—I know that a large proportion of their objects were attained. One of the ablest of them is in the room, Dr. Buchanan, who was also secretary for a long while to the Association of Officers of Health, and he would be able to inform the Commission upon that point.

1924. I ask you that question specially on account of the last clause in that memorandum which had reference to the relation of the officers of health, but here called sanitary officers, to the Poor Law Commissioners. I notice that in that document it seems to be considered that the health officers or sanitary officers should be distinct from the poor law officers. From your experience in this matter, do you consider that a desirable separation?—In special sanitary districts, such as the metropolis and other large towns, you may expect to get a more developed sanitary officer, and a more specially instructed man altogether, than the poor law medical officer can generally be expected to be; but when you come to the country districts, I suppose that almost universally the health officer and the poor law medical officer must be one person. That point was missed before, and it is one of importance. Perhaps I may be allowed to

explain myself. I will start from the point that I took, about causes of death not being medically certified. I think that for all cases that do not fall within coroner's inquests a medical certificate of the cause of death should be legally required. It should be required by law of the medical attendant if there has been a medical attendant, and if there has not been a medical attendant, it should be required of some public functionary. Where there is a special health district I think that the law ought to require that a special health officer should be in action; but in places where there is not a special health officer, functions of that kind or the rudimentary functions of an officer of health should be discharged by the poor law medical officer of the district. I think that in the absence of any special sanitary officer the poor law medical officer should be the sanitary officer. That would apply to country districts where I propose that the destitution authority and the nuisance authority should be one. There the poor law officer in his district should, I think, be the sanitary officer as well as the destitution doctor. But when you come to large cities, where there is a more developed, a more accomplished, and a more special sanitary officer, you ask what is to be the relation of that man to the poor law officers. It must I suppose to a great extent be the relation of voluntary co-operation; but the sanitary officer ought certainly to have access to the books and records of the poor law officers, or else their records ought to be published; they ought to be accessible to him specially, or else they ought to be public documents, so that the whole world should have access to them, as to the quantities and localities of illness. I can speak very particularly about that subject, from my own experience. Before I entered the Government service, I was for seven years acting for a local authority. I was officer of health for the City of London, and when I was appointed the first necessity that came to my mind was, how am I to know what illness there is in the city; and the first official memorandum I wrote was on the necessity of information from the poor law officers as to the diseases under their care. After some difficulties they were kind enough to give me that voluntarily and gratuitously, and for the seven years continued to do so. I am sorry to say that there were difficulties made at first; for very naturally, reasonably, and properly, they expected to be remunerated for the trouble which I asked them to take. Those who held the purse strings would not remunerate them; but there was a great deal of kindliness and generosity on the part of the medical officers, and they threw that consideration overboard, and gave me systematic information every week of the illness prevailing in their districts.

1925. It would appear then that you have in every parish and in every union a medical officer employed by the State for what you call "destitution" purposes?—Yes.

1926. And in all districts excepting great districts or large areas, as they are called, you would propose to superadd to them certain sanitary duties, or, as Sir Thomas Watson called them, duties connected with State medicine, was that your proposition?—The rudimentary duties only. I do not think it would be reasonable to expect any very extensive and elaborate duties from them, nor in the present state of affairs could one, I think, expect that they would have all the requisite attainments for such duties.

1927. Still has not the law of the land occasionally imposed upon the guardians in places where epidemics have raged, or been expected, the administration of those State medicine duties under the Diseases Prevention Act?—Yes.

1928. So that in fact while medical men have been appointed under various Poor Law Acts to discharge the particular duty of the care of the pauper class, they in point of fact have also been called upon to perform important duties in the administration of State medicine, whether they were appointed for the purpose or whether they were qualified for it or no?—The question probably refers to such functions as they have occasionally been called upon to discharge under the Diseases Prevention Act. Its main object has been to extend medical relief at times of severe epidemics beyond the limits of the pauper population, as far upwards in the social scale as emergencies might make necessary.

1929. And they might have to advise for instance upon hospital arrangements and provisions for the sick to any extent, especially in cases of cholera?—There has not in fact been much of such action I think. However, the responsibility has existed, no doubt.

1930. Supposing this large body of men were utilized as sanitary officers, would you have them under the Poor Law Board?—That is a very difficult question to answer, if it means whether medical relief should be separated from the general relief of destitution.

1931. In one of the observations which you made just now, I think that you said that those sanitary duties do fall under the care of the guardians very often, and that in fact they must be combined in the same person. Referring to the proposition of having the health department of the country under one Cabinet Minister or under the Home Office, do you think that all sanitary duties should necessarily be under his supervision? Supposing that the sanitary officer were under the payment of the Poor Law Board as a pauper relief officer, he might be also a public sanitary officer under the Home Office. Would you wish to see the superintendence of these double functions combined under one chief?—I do not think that at present it would be possible to combine them under one chief, that is to say, to make the medical relief of paupers a part of the health administration of the country. That question, however, is an immensely difficult one, and I speak at present with hesitation about it.

1932. That probably bears upon another point about which I will ask you, under the subject of inspection, but how do the local sanitary grievances generally come to your knowledge?—In various ways, and very imperfectly. Sometimes there is a note from a registrar to the Registrar General, which the Registrar General communicates to me. Sometimes the Local Government Act Office gets a report of a fever, or the Home Office gets a report of a fever, and sends it to us. Sometimes the Poor Law Board hears of a fever and tells us; or sometimes a complainant writes to us, it may be mainly about the absence of drainage, and he incidentally mentions fever, or he may write expressly to tell us of an outbreak of fever; it is in very various ways, and sometimes, as I said, we do not hear at all. There are localities that are interested in suppressing the fact that they have got attacks of disease. Sometimes they do not like to be overhauled from the centre with reference to their shortcomings; and at other times they are afraid of having visitors frightened away, and so forth; and registrars are given to understand that they must not communicate awkward facts.

1933. Would efficient inspection or some complete system of inspection obviate a concealment of that kind?—It would do a great deal, but the law of course ought to make the concealment an offence. The communication of such facts should be obligatory.

1934. We have a good many inspectors at this moment appointed by law for different purposes relating to the public health. Sir Thomas Watson mentioned the inspectors for the purpose of lunacy, who are partly medical and partly legal inspectors, are they not?—Yes.

1935. And they inspect hospitals; that is to say, hospitals for the insane?—Yes.

1936. I do not propose to suggest, but still the suggestion arises in one's mind, would they be competent authorities to inspect other hospitals in the country. If they inspect, for instance, a hospital for lunatics outside a town, would they be competent judges of the condition and statistics of the hospitals for other diseases in the town?—They might or

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might not be, it would be a chance in the system; for they would have been chosen for other qualifications.

1937. Then in addition to those lunacy inspectors there are highly skilled poor law inspectors, are there not?—Two of the poor law inspectors are members of the medical profession.

1938. I did not presume to ask of their qualifications to be inspectors, but as a fact there are inspectors examining large areas to which they are respectively assigned, part of whose duty is to report upon all the hospitals and infirmaries belonging to one class of sick in the country?—Yes.

1939. So that you have inspection of hospitals for lunatics and you have an inspection of hospitals for paupers going on at this moment?—Yes.

1940. Then there are inspectors under the Factory Acts?—Yes.

1941. Are they medical inspectors?—I think not. Mr. Baker is in point of fact a medical man, but his appointment bore no particular reference, I think, to his medical attainments.

1942. They are called certifying surgeons, and there are several hundred persons at this moment, are there not, engaged in that kind of medical inspection over all factories?—Yes.

1943. Under another Act are there not medical gentlemen appointed to examine workshops which are not factories under the Workshops Act?—Not, so far as I know, by Government.

1944. The Privy Council send out medical inspectors, do they not?—Yes.

1945. And you have supreme power to send those inspectors from your own office, as I understand, for any medical purpose to any part of the country?—Yes.

1946. Then in fact there are at this moment many inspectors examining the country for different purposes: do you consider from your experience that anything can be done by re-arranging or re-organizing the duties of that kind of inspection: at this moment there is a staff for various purposes, and I am not aware that it has been hitherto considered how far some of their functions might be combined?—That question forms part of the larger one, whether the Lunacy Commission could be merged, or partly merged, in the general health administration of the country, and whether the Factory Inspection could be merged, or partly merged, in the general health administration of the country, and so forth: meaning by "partly merged," merged so far as their subject-matter is medical. Those are questions which I am not quite prepared to answer, but I am not aware that the factory inspectors consider themselves to be acting medically, except in a very qualified sense. The employment of the certifying surgeons has borne reference chiefly to the ages of children; for none under eight years of age were to be employed, and these officers have also to inquire into factory accidents; but there is a wide difference between that kind of work and the work that our medical department did in relation to factories during the four years 1861–3, when we studied all the chief industries of the country in their relation to health, and went into the influence of industries in producing lung diseases. That was a purely medical inspection, which is a very different matter.

1947. Still, under the idea which you have so clearly expressed in the former part of your evidence, that there should be a central office of some kind, it would be a matter for consideration, would it not, first, what kind of duties you would assign to the inspectors, and, secondly, over what areas, large and small, you would appoint them?—If I look at that matter from the point of view of the Home Office, supposing all those matters were in the Home Office, I cannot say that it would not be necessary to have special lunacy inspectors. I should think that on any system lunacy inspecting would be a very convenient unit of inspection; that is to say, that men who inspect for lunacy purposes should not also inspect alkali works or burial grounds. I think it would be a convenient speciality, employing, as at present, a certain small number of men exclusively for that duty.

1948. Have you formed any opinion as to the best kind of organization in the Health Office for all sanitary purposes; are we to understand that you would wish to have them combined, if not in the same persons yet under the same administration, that is to say, in a general health office of some kind?—As a general principle I think that, so far as medical inspections have to be made, they should be made from one office; but special consideration would be wanted for branch offices, with mixed functions.

1949. There is one other point which has not been touched upon to-day, but it is of sufficient importance to ask a question about it; when you have understood that water is probably unfit for use, you have the means, have you not, of analysing it, and reporting upon it?—Yes.

1950. Is there a scientific laboratory connected with the Privy Council Office?—We send the water for analysis always, or nearly always, to King's College, to Professor Miller.

1951. In a district in the country where the water is supposed to be unfit for use, you would not suppose that the local chemist or the local medical man would be necessarily capable of giving a correct opinion as to the condition of that water. Is there any recognised means of testing whether the water is fit for drinking in every district of the country; or would you rely upon the scientific opinion of some one in any parish that might be named?—It would hardly want much of a scientific opinion. The state of the case too generally is that the well is sunk close by the privy and cesspool, and that the soakage is from a very few feet. A chemical analysis perhaps would sometimes be an imperfect addition to the judgment of taste and smell. One could arrive at a conclusion very easily; measuring the distance or tasting the water, it would not want analysis.

1952. As a matter of fact is not great stress laid upon the chemical analysis of water?—Sometimes too much.

1953. The Home Office will undertake, will they not, to analyse water?—In some cases, I believe.

1954. It is the fact that water may be sent up to the Local Government Office, and whether necessarily or no I do not say, but they will furnish an opinion upon that water?—I believe so.

1955. Do you think that laboratories either in the metropolis or elsewhere are necessary for sanitary purposes?—Undoubtedly laboratories are necessary; using the word laboratory of course to include all means of scientific observation, for the adulterations, and diseased and other unwholesome states, of animal and vegetable food, for unwholesome state of water, and so forth; but at the same time we must not disguise from ourselves, as regards water, that in cases where the utmost mischief has been done by water, the real test of the poisonousness of the water has been in the killing of the people, and not in what the chemists have been able to demonstrate.

1956. But at the same time you would say that as an administrative principle it is essential that the Government Health Officers should be able in some way to get reliable analyses of foods and drinks and the like?—Yes, certainly.

1957. And that you would consider as part of the administrative duties of some central health office?—I hesitate to say that it ought to be the duty of the central office to undertake ordinary analyses for localities. No doubt on many occasions they have so done, but supposing the thing to be on a large scale, I am disposed to think that, for instance, Liverpool, Manchester, or Birmingham ought to be able, as part of their municipal government, to look after adulterations and quality of food, the quality of water supply, and so forth; and that they ought not I think to have to come to the Government for it.

1958. They need not come to the central Government, but I understand that you think that some, so to say, recognised or competent laboratories, either private or public, must exist in the country for such a purpose?—Yes, certainly.

1959. And that it is desirable that those delicate scientific operations should be conducted by persons of good known competence?—Yes, of good competence.

1960. Have you anything that you would wish to say to the Commission concerning the extension of the Contagious Diseases Act to the civil population?—I have not prepared myself to speak to the Commission upon that subject, but I have been considering it a good deal lately, and I am not prepared, as at present informed, to recommend it. I think that it would be unwise for the Government to undertake that immense responsibility, unless it saw its way to make a very great difference in the quantity of those sorts of venereal diseases, in which alone society is greatly and permanently interested, I mean *true syphilis*. I think there prevail exaggerated impressions about true syphilis. I have come across statements in print that certainly are likely to convey very exaggerated impressions even of the total quantity of venereal disease which is current. Then the public has translated those statements, which convey a very exaggerated impression of the quantity of venereal disease in the mass, into meaning true syphilis. The belief results that a disease hereditarily transmissible, and spreading among the non-fornicative parts of the population, is prevailing to an immense extent, to an extent very greatly beyond the real facts of the case. I have been looking up the subject, and here is an illustration of the want of sickness returns. We unfortunately have got no returns that we can appeal to on this matter, as extending over long periods of time, and concerning the whole civil population; but last year I had an inquiry made as to the quantity of venereal disease then under treatment among the sick poor in London, and what came out was this. Amongst the sick poor, as far as we could make out, in London, at any one moment, about seven per cent. were venereally diseased; and of that seven per cent., at any moment, about half were under treatment for true syphilis. Impressions had previously been given that the quantity of syphilis under treatment among the sick poor was an amount very greatly beyond this—even up to about ten times as much. Then we looked up the prevalence of congenital syphilis at the children's hospital in Great Ormond Street. I had seen a statement which could hardly have been meant to say so, but looked as if signifying that every fifth child of the sick poor was syphilitically diseased. We looked up about 120,000 cases that had been treated during the last 10 years; and we found that the proportion recorded as syphilitic was only one and a half per cent. These are great differences. So that I think that the public has got exaggerated impressions of the quantity of the disease; but be that as it may, I have a very strong impression of the extreme difficulty of making a great difference in the quantity of syphilis by a sanitary supervision of prostitutes. The promoters of legislation in this matter only present, at present, the very thin end of the wedge. They talk of permissive legislation, and the mildest form of permissive legislation, but they show us what is wanted if the thing is to be effectual. We are told that every third prostitute is diseased, and I have very little doubt that it is so. I think it is suggested that in London there are something like 18,000 women who get their living by prostitution. This would mean that we should want 6,000 beds in London alone to work such a system as is talked about; but say that accommodation is only required for 3,000 or 2,000 beds, it is a very formidable requirement, especially when you consider what people are saying now about the poor law asylums for the sick. Then there would be a great organization necessary, and an amount of supervision of prostitutes required, that would be very difficult. And what would be the result? I have not the least doubt that you would make a great difference in the prevalence of gonorrhœa, and in the prevalence of pseudo-syphilis; but the State has not, I apprehend, to trouble itself much about preventing these forms of disease. I do not suppose that the Government needs take very much to heart that a considerable quantity of clap is current in society, or that a considerable quantity of pseudo-syphilis is current. Hereditarily transmissible true syphilis is the only very important question; but to prevent true syphilis to any great extent is incomparably more difficult than to prevent the other forms of disease. It eludes discovery to a very considerable extent, it is very little complained of, and it is very recurrent, in the women who are the subjects of it; and thus I fear that any result to be got by law in relation to venereal diseases would be got least of all in the only part of the catalogue of such diseases in which society is permanently interested. In short I do not see my way at present to recommend any extension to the civil population of such measures as have recently been in force at certain military and naval stations. Of course the case as regards military and naval prostitutes is quite a special case; special as a matter of finance, and special in another point of view; special, because the country loses so very much in the effectiveness of the army and navy by venereal diseases, that it is worth while to pay, and even to pay a very long sum, to diminish their chances of catching even the unimportant venereal diseases; and special also in so far as that the State which keeps large masses of men unmarried has a sort of responsibility for the moral and physical consequences which are involved in that state of things. So those are special cases. But when you come to the civil population I think the case is different. As far as I can see my way, I do not think that the good to be attained is by any means large enough and sure enough to justify the Government in departing from the principle that it recognizes in analogous other cases, the principle of *caveat emptor*.

1961. Do you think, in consequence of the discussions which have taken place of late, that it is or is not desirable to have special education or special examinations for a class of sanitary officers, or would you leave that to chance?—I think it is in the highest degree desirable. The subject of course is difficult. Originally the Board of Health had to approve of the appointment and to approve of the removal of the officers of health, but that control was given up in 1858, and I suppose it was given up because it was found to be really inoperative. But I think the Government might very usefully be empowered to lay down regulations as to the qualifications for sanitary offices; and, indeed, I would extend that principle to the poor law appointments also.

The witness withdrew.

Adjourned to Thursday next, at 12 o'clock.

Thursday, 3rd June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, R.E.
SAMUEL WHITBREAD, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JAMES PAGET, Esq., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

imon, Esq., F.R.S.

June 1869.

(11.) JOHN SIMON, Esq., F.R.S., further examined.

1962. (*Mr. Bircham.*) You expressed at our last meeting a strong opinion as to the chaotic state of the law. Your illustrations were principally, I think, with reference to the law in its application to rural districts; may we infer that in your opinion the Local Government Acts provide generally for health matters in those districts where they are applied?—I think they do fairly.

1963. Subject to amendment in detail?—Yes.

1964. You would break up that part of the country which has not taken upon itself the Local Government Act, or is not under any special legislation, into areas something in extent, as I understand you, similar to the poor law unions?—I would accept those divisions as existing.

1965. You would accept the poor law division as the health division?—Yes.

1966. Does it occur to you that physical questions, such as water and drainage, ought to enter considerably into the formation of districts for health purposes?—It does, and very strongly; but the requirement which you suggest could only be directly fulfilled by mapping out the country *de novo* on the basis of drainage affinities, and making this the leading principle in the constitution of local authorities. And it seems to me that the object would be better attained in this other way, namely, that taking, to start, the poor law division of the country, each health authority should be amply enabled to act by committees; and this, either for divisions of district, or for divisions of subject matter; and that either totally or by its committees it should be able to co-operate with adjoining health authorities; and more than that, I would propose that the central authority should be able to require such combinations to be made. That is how I would meet the large drainage question, which no doubt is one which ought to be met.

1967. The country has been largely divided for the purpose of highways. Does it occur to you that it is desirable, in analogy to what obtains in the Local Government Acts, that the highway boards and those who have jurisdiction over sewers and drains should be the same?—Yes, it does occur to me as an advantage; but there are advantages also on the other side, counterbalancing advantages, as I think. It is very important that the local health administration of the country should be identified with the system of medical relief of the poor. There is a medical staff existing everywhere throughout the country for the purpose of that system, and therewith are ample facilities for knowing what is the state of health of every poor law section of the population; and it would be inconvenient, I think, to totally dissociate that machinery from the local health administration of the country.

1968. Do that and other considerations induce you to think that without more inquiry the poor law union districts might be and should be accepted as the health districts?—I think it on the whole better; observing also, that, as far as I understand the highway board system, it would be no better adjusted than the poor law union system to drainage exigencies and so forth.

1969. Would it not be better that the country should be mapped afresh for purposes of health (including sewers, &c.) and highways, there being no particular necessity that the highway districts should remain as at present?—I have no doubt it would be by far best, if attainable, that the country should be reviewed altogether, and intelligently re-mapped for all modern purposes of local government; but this would be a work of immense duration.

1970. The poor law districts have been formed solely with reference to poor law administration,—water supply, or drainage, or any consideration of that sort having been quite out of the question?—Yes.

1971. Assuming districts formed, if I understand you aright you would leave the local board without any authority intermediate between it and the central London board?—I do propose, as I will hereafter explain, that, for certain special health objects, there should be a second set of local authorities—authorities of larger areas; but between these authorities and the nuisance authorities there would be no community of business. I do not propose that there should be an authority intermediate between the nuisance authority and the central government in respect of nuisance action.

1972. You would place the nuisance action and the health action, if I understand you aright, in the same hand?—Yes, a certain health action. There are some sorts of health action for which I should not propose to vest authority in common local boards. There are certain health actions that have to be discharged over large areas, and perhaps in a somewhat different spirit to that on which we can always reckon in elective local boards, and those I think would be better exercised, as the lunacy action is now exercised, by the magistrates of the country.

1973. Nothing is to go between the central authority and the local board for bringing what the local board is doing under the notice of the central authority?—I think that it would be inexpedient; it would intercept communication rather than promote communication, and diminish the force of stimulation rather than give it effect.

1974. Have you had much experience of the manner in which health questions are treated in rural districts?—Yes, indeed I have.

1975. Assuming unions of rural parishes of a purely agricultural character for health purposes, do you think they would act without pressure from outside?—No, I am sure they would not; but hitherto, as of course the Commission knows very well, what we have been able to do in my department, in the way of pressing local authorities for common health administration, has not been very much. Public vaccination is the only matter of health administration where we have had ample power, and there we have had an organization through which we have been in constant communication with boards of guardians, giving them skilled advice, and I must say that it has worked very well. Of course the agricultural mind, as represented in country boards of guardians, is not always that quality of mind which is likely to be very well up in such subjects as vaccination. We have had to bring a good many new thoughts before them; we have had to change their system very much indeed, and to interfere in details; but they have accepted that interference and have altered their modes of action; and now, within the last two or three years,

the improvements which have been made in the system of the vaccination of the country are enormous, by the action of those boards accepting the suggestions given them for their mode of action.

1976. Is that a matter which has caused any increase of rating?—Yes.

1977. Any large expense?—Not such expense as would be caused by new sewers.

1978. Then you would interpose nothing between the Health Minister and his staff in London and the local authority created, whatever it might happen to be?—Nothing.

1979. How would you gain a knowledge of what is going on in the country?—The Commission will remember that I laid a good deal of stress on an improved system of records and returns of the deaths and the sickness of the community.

1980. You said something of a staff of itinerant "state-medicine" inspectors; do you propose to assign to them any duty of communication between the local boards and the central authority?—Yes, certainly; such as is now the duty of our vaccination inspectors for vaccination purposes. They inspect every vaccination district in detail once in two years.

1981. What kind of qualification do you propose that those itinerant inspectors should have?—Quite recently two such inspectors have been appointed by government, and their qualifications are these: One of them, Dr. Buchanan, has for many years been acting for us as occasional inspector, and has written reports which are of very high reputation. He had been for years physician of the Fever Hospital. He had also long been one of the metropolitan officers of health. Thus in various ways important for our purpose he had the qualifications of great experience and special study, not qualifications that one could very easily define on a schedule of professional titles, but qualifications that made him exactly the kind of inspector that was wanted. The other is Mr. Ratcliffe, who had similarly done a good deal of occasional work for the office, and had written a number of valuable reports, and had been generally occupied in the study of epidemics for many years.

1982. My question was rather more general, not as to the qualification of individuals now filling particular offices, but what you might propose as the qualifications of those itinerant inspectors—for instance—should they be medical men?—Yes, certainly.

1983. I understood that you stated in answer to a question which was put to you in your former examination that some officers possessing "state medicine" qualification and education would be set going as itinerant inspectors?—Yes.

1984. I understood you to say that you would rely on the Court of Queen's Bench to put in motion the local boards, by means of mandamus or otherwise, in case of neglect of duty?—I of course cannot venture to speak very confidently on points of legal practice. I speak subject to the correction of men who know much more of these matters than I can pretend to know myself, but it seemed to me that to rely on the ordinary apparatus of mandamus was the best course.

1985. Do you see any reason to withdraw from the Health Minister the power to make the order in the first instance, instead of going to a court of law to make it?—I am rather disposed to think that it should not be the Secretary of State's order, but the order of the Court of Queen's Bench.

1986. You would suggest that the Secretary of State should appear before the court as a relator of certain mischiefs going on, and suggest to the court some remedial action?—Yes, that is just it.

1987. Until 1866, when the 49th section of the Health Act gave the Secretary of State the power to execute works in default of the local authority, there was no such power?—That is so.

1988. Do you know what the history of that addition to the health power was?—Yes, I know something about it, for I myself very strongly advocated that the form of the law in relation to local authorities acting for health purposes, in certain cases, should be "shall" instead of "may." That view was particularly argued in my seventh and eighth annual reports. It was accepted by my masters, and the proposal was, in consequence, made to Parliament. In the original form of the 49th clause it was not proposed that the Secretary of State should exercise such a power as was eventually given to him, but strong representations were made from some towns that they would generally prefer this form of legislation, and that if pressure was to be put upon them they would rather that it should be put by the Secretary of State. So, late in the session of 1866, after the change of ministry which then occurred, the clause was altered to its present form; I do not know exactly what the steps were.

1989. You think it unsound legislation?—The intention is of course entirely at one with my recommendation, but the exact form is not such as I think best. I thought it inexpedient, and I still think it inexpedient.

1990. Would not the knowledge that such a power existed frequently prevent the necessity of its exercise?—Yes, but, still more, I feel that with respect to the mandamus power.

1991. If in a few instances the Secretary of State interfered, and the consequence was a larger expense to the particular district than would have been incurred if they had attended to their own business; do you think that a few examples of that kind would have a salutary influence upon other boards who were inclined to neglect their duty?—Certainly.

1992. You have had experience, I daresay, of health being affected by the habitation of tenements unfit for human habitation?—Yes, unfortunately to a great extent.

1993. Has any remedial legislation on that subject occurred to you as desirable, such for instance as requiring new tenements to be licensed by some authority before they could be inhabited?—Yes, I am of opinion that such ought to be the state of the law.

1994. And that there should be legislation enabling the local authority to enforce in all tenements a proper supply of water, and proper privies, cess pits, and so on, before the house should be inhabited?—Yes.

1995. Are you also of opinion that with regard to existing tenements there should be sharper legislation than there now is, with a view of bringing about changes where proper conveniences do not exist?—Yes.

1996. You said something, if I understood you aright, as to the irresponsibility of water companies. Did you use that phrase with reference to a general failing of duty on the part of water companies?—I think it is only now that water companies are beginning to understand what an immense influence for good or bad is in their hands; I should therefore hesitate very much to speak as imputing criminal negligence to some of the things which water companies in past times have done; but, not to mention the excremental stuff that some companies have distributed at times when they were ignorant of what might come from such distribution, I think that at least henceforth they ought to be made subject to control.

1997. What legislation would you propose in the matter?—In the first place, I think that water companies should be subject to certain general rules, such as the London companies are, in a very mild form, subject to, as to the filtration of the water, and so forth. No new water company should be establishable without being required to show that it had satisfactory means of supplying pure water. Some sort of preliminary certificate should be necessary, such as the Board of Trade now gives in the case of new lines of railway. And here one must also look a stage further back. First of all, the sources ought to be protected from pollution; and then the water companies should be required by law to take proper precautions for keeping their water clean; and failing that proper care, they should be punishable at law, punishable by indictment. Further it seems to me that the way ought

to be made as clear as possible at law for persons injured by the water companies obtaining damages from them. In my last two official reports I have endeavoured to show how much some such remedies as these are wanted.

1998. In the suggestion that the sources should be protected from pollution, of course all the water companies would be well pleased by legislation upon the subject; that is a matter a good deal beyond their control, is it not?—Yes.

1999. Have there occurred to you any special matters that you could suggest as corrective of any general neglect of duty on the part of the water companies? I would draw your attention to the jurisdiction which exists with local boards under the 75th section of the Act of 1848 and the 51st section of the Local Government Act; I mean those sections which give the local board power to lay on water when it can be procured at certain prices; are those clauses much availed of, in your experience, by local boards?—I cannot offhand accurately state to what extent local boards have acted under these sections.

2000. (*Mr. Shaw.*) As to mandamus being a really efficient remedy. Suppose, for instance, that the Act said that the local authority shall see that every house is drained by a sufficient drain, you could not have a much more peremptory clause than that?—No.

2001. Then if you had a mandamus upon that, the local board might already have done something, but something which to your eye and to the eye of the Secretary of State might be insufficient, and do you not think that there would be great difficulty in the Court of Queen's Bench judging upon the mandamus of what was or was not sufficient, seeing that the probability is that they would not try it upon affidavit, but would have a jury trial at a great deal of expense and complication? would not it be very much simpler that the Secretary of State should have the power of saying that such and such drain is sufficient or insufficient, and you must make it better, and if you do not you shall be liable to a penalty for contravening my order?—No doubt that does look much easier to work than the pure mandamus arrangement; but I presume the law could conveniently combine the two modes of procedure, so that details to be embodied in a mandamus should have been advised by a public officer, and the mandamus should require the works to be done to this officer's satisfaction.

2002. The rule as to a mandamus is that the court will never grant a mandamus against any party who has a discretion if he has once exercised that discretion honestly, however mistaken it may have been; would not that be a great bar to the practical remedy by mandamus?—Perhaps hardly so. If the law were well constructed the local authority might be allowed large discretion as to means and modes of action so long as the result should be attained.

2003. There would be no difficulty, would there, in the Secretary of State making the order, and the Act inflicting a penalty upon any party who disobeyed that order?—I presume not.

2004. That would not involve the Secretary of State doing the work himself; he would send the order to the parties to do it, and if the parties contravened it, or did it ineffectually, they would be liable to a penalty to be recovered in a simple form?—Yes.

2005. Would not that be equally in *terrorem* as the remedy by mandamus, besides being much prompter?—Yes, for a large class of cases I think it would.

2006. You mentioned in your evidence that the guardians as the local authority ought to have very ample power of acting by committees. I presume you meant by that the sort of power which exists under the Nuisances Removal Act of 1855, under which the local authority may appoint a committee of their own body, issue notices, and take proceedings, and in all those, or in any other specified respects execute this Act, with power to delegate their authority?—Yes. There is similar provision in the Act of 1860, and a very good clause in the Sewage Utilization Act of last session, with respect to the powers of a committee.

2007. You merely meant generally the power to delegate their authority to committees?—Yes.

2008. Will you tell us why you attach so much importance to that?—Because of the very large extent of the unions. If the area of the union is to be the area of the nuisance authority it may be an area extending over a great many miles in all directions.

2009. Then would you have them appoint several committees?—Yes, but there would still remain the one original, tangible governing body for the Government to address.

2010. Do you think that the power to guardians to appoint committees would have any operation in inducing persons having special aptitudes for health questions to serve upon the board of guardians, in order to be put upon such committees, whose duty would be principally sanitary?—I think it might.

2011. Is there not great difficulty in getting a sufficiently high class of men to serve on those local boards?—I believe that that is one very great difficulty, and another very great difficulty unfortunately is that people of an opposite sort are sometimes very anxious to serve.

2012. Is that for the sake of a job?—Owners of house property procure themselves to be elected on boards for the protection of their personal interests.

2013. Would you not regard the interposition of a county board as a means of getting a higher class of persons interested in the subject, and, so to speak, educating a higher class of men into sanitary knowledge?—That would of course be good; but then, as a set-off, you would have so much less intimate knowledge of particular places that I fear the administration of the law might fare badly.

2014. Do you not think that they might form an intermediate court of appeal, so that if a person complained that the local board was not doing its duty the county board might step in?—I confess that I think not. I think it would be inconvenient.

2015. You were mentioning that you thought that the nuisance law was tolerably complete as it stood, and that there were not many excepted cases; there is no power, is there, to close a source of water supply which is found to be injurious to health?—No, and I have often very much wished for that power, but one cannot shut one's eyes to the fact that there are difficulties in the way. A man has a well in his garden close by his cesspool, and it is polluted, and must be polluted as long as the contiguity exists; but when you propose to shut it, he says, "It is very hard to shut "up this well. I never drink it, and my people never "drink it; we only use it for watering the garden, "and purposes of that sort." That may be true or untrue, but if it is untrue you do not easily prove that it is untrue.

2016. But there is no power, is there, to close even a public well to which notoriously persons have access for drinking purposes?—I think there is. That is to say, the property in public wells is vested in local authorities.

2017. Has it the authority to close such a well?—I suppose no one can effectually dispute the right.

2018. The question was put to a witness the other day, and he was under the impression that there was no such power?—I have never witnessed any difficulty on that score; I have known plenty of cases of public wells being closed.

2019. Considering the condition of cottages in the country, and considering the class of persons who inhabit them, who are generally of a low class, and have no real remedy against their landlords for want of repair, do you think it would be advisable to bring such cases under the law; for instance, where the roofs were not water-tight, do you think it advisable to give a summary remedy for those cases?—Yes, I do think that very desirable, but I am disposed to think that the condition of cottage property, apart from questions of nuisance, might be less well dealt

with by the ordinary nuisance authority than by magistrates in quarter sessions.

2020. That power does not exist exactly at present, does it?—No.

2021. Have you found any instance in which the provision, which for the first time was introduced into the Act of 1866, of the local board being obliged to give notice before taking proceedings and summoning a party for a nuisance, has operated badly?—That has certainly been represented to me as a blot in the law, and as interfering with the promptitude of proceedings, and I therefore think it to be regretted.

2022. Have you directed your attention at all to the question whether sanitary reform should be made by byelaws or by clauses in Acts of Parliament, and whether there are not a number of minor things which require to be treated by byelaws made by some authority?—Yes. The notion which I have of a nuisance law is this: that a law made with the view to summary proceedings, but of course subject in certain cases to appeal to a superior court, should be made to cover as far as practicable all influences that endanger public health, and with the word "nuisance" used to cover as large a number of such influences as possible; and then that in respect of all "nuisances" liable to be recurrent or to be habitual, either the central authority, or with the consent of the central authority the local authorities, should be able to make regulations or byelaws enforceable by penalties. That is my notion of the plan of the law.

2023. You mentioned, I think, in your evidence that overcrowding is declared a nuisance, and that the Home Secretary is able to regulate the division of tenement houses; is it not the case that he has no power of that sort until the local authority applies to him?—Yes, that is so.

2024. Then the local authority may render that power perfectly inefficient by refusing to make that application?—Yes.

2025. Would you conceive it to be advisable that the Home Secretary should have that power without requiring any application on the part of the local authority?—Yes.

2026. That it should be a compulsory part of the Act, instead of a part which the parties might or might not put into operation?—Yes, compulsory for cases requiring it, and enabling the Secretary of State of his own motion to judge whether a case had arisen.

2027. There is a clause in the Amendment Act of 1868 (clause 10) which says this, "the sewer authority, or in the metropolis the nuisance authority, shall have the like power to make provision for the temporary supply of medicine and medical assistance for the poorer inhabitants, as it now has to provide hospitals or temporary places for the reception of the sick under the 37th section of the Sanitary Act, 1866; but such power to make provision for the temporary supply of medicine and medical assistance shall not be exercised without the sanction of Her Majesty's Privy Council." That is rather a new kind of clause, is it not, because without proclaiming the district, as is done under the Act of 1858, the Privy Council obtain under this clause the power of sanctioning extra expenditure?—Yes, I knew nothing of that clause until I saw it in the Act. I do not know where it came from, nor anything whatever of the history of it.

2028. Would you consider it advisable that that sort of power should be increased, that some central authority, either the Privy Council or the Home Secretary, should have power to sanction additional measures being taken by a local board without going to the alarming process of proclaiming the district in the Gazette?—Yes, certainly; I think altogether that the machinery of the Diseases Prevention Act might very advantageously be reviewed in that sense.

2029. And that the central authority should have power to give increased authority to a local board in special cases in a quiet way?—Yes, at various times such increased authority has been asked for, but it could not be given without such a fuss that it was on the whole not desirable that it should be given.

2030. That clause does provide for its being done in a quiet way?—Yes.

2031. (*Mr. Powell.*) You suggested, in answer to Sir Thomas Watson, that the inspectors of the Government should be itinerant. Do you mean that they should go over the country making examinations day by day, moving at their own discretion; or that they should go from place to place when sent for under some circumstance or other?—They would of course be acting under central directions, and those central directions would be given according to the requirements of the districts. An estimate of the requirements of the districts would be formed in one of two ways—special representations made to the central authority, or the death returns and sickness returns of the quarter. The central authority might receive no representation from the local authority, who might be fast asleep as to its duties, but the mortality returns or sickness returns of the quarter might show that there was an epidemic of preventable disease going on in the district, and then the inspector would be directed to go there.

2032. He would go when moved by the authority in the district, or under the direction of the central authority, when there seemed to be something remarkable in the circumstances of the district, or when the authorities of the district asked for his attention?—Quite so.

2033. And you would likewise enable the central authority to listen to private complaints, and to send an inspector in case private complaints were made?—Yes, certainly. All that is our present practice; it is very imperfect at present, because the system of returns is so imperfect; but that is our system.

2034. And would the inspector, whom you have described as itinerant, under the circumstances which you likewise described, be a medical gentleman?—Yes.

2035. Supposing that circumstances were to occur leading the Government to think that some engineer officer, or some one acquainted with engineering, ought to visit a district, he would come subsequently and independently?—Yes.

2036. There would therefore be a second visit?—Yes, in such cases there would be a second visit.

2037. Could you define in any manner when the inspector so sent should consider that he ought to take any steps; for example, if he saw in a district that there was a cesspool or two, or some trifling things of that kind, he would probably not think it necessary to do anything himself?—He would advise the local authority.

2038. Then you would place him in those itinerations in communication with the local authority?—Yes.

2039. But you would not give him any power to act?—Certainly not, in the first instance. In the first instance it would be mere inquiry and advice; that is the principle on which we act now.

2040. Should you think it expedient that a medical officer so acting should have some little knowledge of the materials of construction, so as to be able to give sound advice; to give an illustration—a naval officer might fairly be expected to pass an examination in steam, but you would not suppose him to construct a steam engine?—I suppose that every well-educated officer of health has such general knowledge of construction as you speak of.

2041. Would you expect that officer to devote himself to that subject, and to arm himself with knowledge, so as to be competent to advise?—Certainly, to a limited extent. You of course will understand that I should not expect him at all to take the place of an adviser on building.

2042. But you would expect him to be acquainted with the ordinary appliances to improve drains, and so forth?—Yes, but never to pretend to speak as a skilled person on the subject-matter of any profession but his own.

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2043. Would you still retain and reserve some power for special occasions analogous to, but not necessarily the same as, the Diseases Prevention Act, or would you suspend that question of legislation altogether?—Looking at it from a purely medical point of view, I do not see much use in the separateness and occasionality of the Diseases Prevention Act. That Act makes a very abrupt line of demarcation, in which I do not see any advantage, between ordinary and what are called extraordinary occasions. I think that abrupt line of demarcation is inconvenient. But, speaking from a different point of view, I believe it is necessary that the local authority should be strictly limited as to the classes to whom it shall give medical relief without pauperising the recipient. Under the Diseases Prevention Act the authority, if it chooses, can give medical relief not only to the pauper class, but any height up in the scale, at its discretion; and I am told by those who know this part of the subject better than I do that it would be inconvenient to alter that state of the law. I believe it to be the view taken by the Poor Law Board that that line of demarcation is desirable, and that the power of giving medical relief above the pauper class should only be for extraordinary occasions definable by Government under that Act.

2044. Do you think that the powers given to all the authorities should be so widely extended as to render unnecessary any special legislation of the character which is to be found in the Diseases Prevention Act; in other words, should no power be kept in reserve by the central authority to be exercised on a special occasion?—I think that simplification would be desirable to this extent, that putting a special Act in force by Order in Council should not be necessary; that the ability to confer special powers on local authorities for somewhat extraordinary purposes should be exerciseable by the central authority as a transaction of everyday life, if necessary; that the minister should be able to do it by letter, without gazette, and without any formal order. But it seems convenient that the discretion should be with him, and not with the local authority, as to when that extension of powers should be made.

2045. Then, in other words, there should be certain powers conferable on the local authority by the central authority which the local authority is not possessed of, except when specially authorized in some much simpler sense?—Yes.

2046. Pursuing that line of examination, could you state in a few words what those special powers should be?—The power to extend medical relief in its largest sense to persons not paupers.

2047. There is a provision in the Diseases Prevention Act with respect to speedy interment of the dead which touches persons' susceptibilities very much, would you have a power of that kind?—Not as an extraordinary power. I am not aware that it is more wanted in relation to cholera, for instance, than in relation to small-pox or scarlet fever.

2048. Do you think that each community ought to be authorized to have a disinfecting apparatus to disinfect clothing, or bedding, or the like?—Yes, I think every health authority ought to be required to have such apparatus.

2049. And do you think that there ought to be a power to compel people to resort to this apparatus?—Perhaps not quite in that form, but in substance I should say yes.

2050. Could you explain your views on that subject for the guidance of the Commission in suggesting an amendment of the law in that case?—I have no doubt that contagious diseases are very much spread by slovenliness in the way in which things soiled by the discharges of the sick are dealt with; and such slovenliness is now punishable; it is treated as a nuisance for anyone to deal in a slovenly manner with such things—to send them about without precautions, and so forth. That in my opinion ought to be strictly worked, and it cannot be strictly worked unless the authority has properly established arrangements for disinfecting; but if the authority has such arrangements it can then, I think, enforce the provision strictly.

2051. And the authority would probably have special carriages to convey those articles, so as not to spread infection by the very fact of their being conveyed through the streets?—Yes, under a good system of local administration the disinfection by the local authority would form a very important part of the local proceedings. And in respect of the poorer classes of the population, proper officers would be in communication with houses where infectious disease prevailed, and would give disinfectants for the disinfection of discharges (as, for instance, in the case of typhoid fever), and for other purposes, and would collect soiled things and have them disinfected, and would advise generally on precautions against the spread of disease.

2052. You stated in answer to a member of the Commission on a former occasion, that there was still some defect in the law as to the construction of houses unfit for habitation, and you stated to-day that you thought no house should be occupied except after a licence by the local authority—is that the only defect in the law which you are aware of as regards buildings?—It seems to me that the fitness of original construction might be sufficiently provided for under a system of first licences.

2053. But you would not give the local authorities a capricious power, would you, of refusing a licence, provided that their byelaws were complied with?—No, certainly not.

2054. Is it your view that in every rural district the plans should be submitted to the local authority and be approved of by them?—Yes.

2055. There is one point of great importance, and that is the ventilation of sewers; without travelling over the whole of that difficult ground, would you express your opinion as to the ventilation of sewers by rain pipes. I observe in the model byelaws and in other byelaws which have been applied to different localities, there is this byelaw, "Proper ventilation "shall be provided in the drainage of every house by "means of the rain waterpipe by special pipe or shaft, "or such other method as the local surveyor may "direct," do you think that that is a satisfactory state of the law?—That is a very good rule I think.

2056. Then do you approve of ventilating the sewers by means of rain pipes?—Yes.

2057. You think that satisfactory?—Not as the whole of the ventilation, but as part of the ventilation. They may want a good deal more than that.

2058. Do you think that there is no danger of conveying disease to a house from some defective construction or some decay of the rain pipe?—That ought to be guarded against.

2059. Supposing that a mandamus was issued against the local authority, have you considered how the person armed with the mandamus would exercise it, what would he do with the mandamus after he had got it; you remember that the Home Office has the power to construct works itself, but what is the Court of Queen's Bench to do beyond issuing the formal instrument?—I suppose it would be requisite that the Court of Queen's Bench should have power to authorize a public officer in default of the local authority to proceed instead of the local authority in the particular case.

2060. Is the Court of Queen's Bench to keep watching and observing and seeing that all those things are done?—I suppose that the appointed public officer would do that, and in case of need would apply a second time to the court.

2061. Then you come back to this, that you interpose the Court of Queen's Bench, and all that complication of the process of applying and gaining a mandamus, between the local authority and the Home Office?—I think there would be more security for the thing being firmly worked if it were worked by the ordinary judicial tribunals of the country, and according

to their ordinary forms of procedure, than if it were worked by a government department.

2062. Is not the Home Office sufficiently difficult to move without another buffer, as you term it?—But the Home Secretary in relation to local authorities may sometimes have a timidity in moving that the Court of Queen's Bench would not feel.

2063. You would still retain, would you not, the authority with the magistrates to make orders, and so forth?—Yes, I do not propose to alter that.

2064. Some question was asked you about the special regulations as to lodging houses, and so on, and you expressed an opinion that the central authority ought to have the power of initiating regulations. You bear in mind that the local authority have power to make byelaws or not to make byelaws, as they see fit. Would you give the central authority power to make byelaws, supposing the local authority remained inactive as to the making of byelaws?—Yes.

2065. Do you propose to place the Lunacy Commissioners immediately under the central authority which you have contemplated?—I have not thought out the position that the Lunacy Commissioners should have in the health system of this country, because I have looked upon them as practically a separate department.

2066. I presume that in the construction of the law, and in carrying out the law respecting dwellings, you would always bear carefully in mind that you may make buildings so expensive and unremunerative that no capital would flow into such enterprises, and that you would defeat your end by the means that you employ?—If a certain style of house, a house not wholesomely habitable, were shut out of the market, other and proper houses would be built to supply the want of houses. If only decent houses were marketable commodities, they certainly would be supplied to meet the demand.

2067. Then you would bound your law by the limits imposed by the most rigid conditions of health?—Not by extreme conditions, but by reasonable conditions. I would not let human beings be living, as considerable sections of the community have been shown to live, in conditions not desirable for swine.

2068. Still you think that the consideration which I have just suggested ought to be borne in mind?—It must certainly be borne in mind, but I do not think it would be found a great practical difficulty.

2069. (*Mr. Cave.*) I presume one reason why houses are unhealthy is, that there is nothing below the floor in the way of excavation, the floor being on the ground?—Yes, in many cases it is more or less so.

2070. But yet I suppose there is not a cottage in the country in which there is any excavation between the ground and the floor?—Cellars are very exceptional.

2071. But you would not shut out such cottages from habitation, would you, on that account?—Not unconditionally, but I would, as far as practicable, require that the soil under the cottage should be dry, and that the cottage should be efficiently floored.

2072. When you say that if bad cottages were excluded from habitation good ones would be built to supply the demand, must not you qualify that by considerations of the expense of building a good cottage and the rent which the tenant can afford to pay?—I think that the amount of pay would adjust itself to the state of the law. A man must live in a habitation, and his wages would in the long run adapt themselves to that rent below which habitation could not be got.

2073. Do not you find practically that in spite of all the exertions of landlords to make people live in a proper way in cottages, the question of rent is so urgent with them that they elude almost every regulation and overcrowd their cottages, and in other ways defeat the object of the landlords?—Yes; the difficulties are undoubtedly very great, and I do not ignore them.

2074. You would say, would you not, that the difficulty of providing habitable cottages for the labourers in poorly paid districts is one that you could hardly see your way to get over at present?—It touches on such very difficult question of political economy, on which I really do not feel competent to speak, that I scarcely like to follow the subject; but I am quite sure of one position in the case, that people ought not to be allowed to let for hire places which they are now allowed to let.

2075. Taking the ordinary rules of supply and demand, and putting out of the question the duty or the inclination of any man to build good cottages as a matter of charity, or as a matter of policy, do you see any way of constructing a cottage to pay which shall be one that people ought to live in?—I have not myself any experience in cottage building, but it seems to me from what I read that very good cottages can be built on terms which are reasonably remunerative. I speak of course without special experience. I speak merely from what I read as one of the general public with reference to cottage building, but it seems to me that that is the case.

2076. Of course the rule would rather be not what the landlord ought to do, but what would tempt a speculator in the way of cottage building. I mean that the persons who build as a matter of trade ought to get from that cottage a remunerative price in the way of rent?—Yes.

2077. You must hardly go further than that, must you, when you lay down rules for the building of cottages for habitation?—I think that the principle which you have stated would be operative if cottages not properly fit for habitation were suppressed. At present they compete against cottages of a better kind.

2078. And you think it would be possible for the builders to contrive some way of building cottages fit for habitation which would pay, supposing that the others were thrown out of the market?—I think it would.

2079. With regard to the inspection you have already stated, have you not, that there is an evil in having a number of medical inspectors of different kinds throughout the country?—I am not quite sure of that as an universal proposition. There are cases, perhaps, where consolidation could usefully be made with reference to the inspections.

2080. Is there not an inconvenience in there being eight or nine different classes of medical men throughout the country who all inspect to a certain extent and make returns?—If one central authority had in his hands all the health supervision of the country, he would still find it necessary to have several sorts of medical inspectors; that is to say, he would not think it desirable that each inspector should act for all purposes independently. He would certainly think it convenient to have special vaccination inspectors. On the other hand, he would consolidate, no doubt, all the medical and quasi-medical inspections that are made of trades. He would consolidate some other inspections. As far as hospitals are inspected, he probably would not bring hospital inspection into connexion with lunacy inspection. Lunacy inspection, I think, probably would remain a specialty.

2081. But you think that there would be the power of consolidation in many cases, provided the central authority were one?—Yes, I have no doubt of that.

2082. Would not it be the case that that consolidation would lead to a better sort of inspection in consequence of the post itself being more dignified and better paid?—It would lead, I think, to some inspections being better planned.

2083. If you had one man to do three things instead of three men you could afford to pay him better; he would do the work better, and he would have more authority?—Yes.

2084. As to vaccination, is there not some difference between inspectors under the vaccination Acts and inspectors of drains and other local circumstances of a parish? Does not the one set of rules extend over the whole country indifferently, and does not the other depend entirely upon local circumstances?—Vaccination depends very much upon local circumstances, upon the distribution

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of population, and so forth; but the other kind of inspection that you speak of—that of sewers and drains, is only in a secondary sense, I suppose, a government business. There are two points of view in which Government may have to do with the drains of a place. If the Government is asked to sanction a mortgage of the rates for the construction of a system of sewerage, it satisfies itself whether the system is a proper one. In cases of this sort the matter is referred to the Local Act Government Office, which satisfies itself whether the proposed system is suitable. Another case is where the public health of a locality has suffered, and where the finding of the medical investigators is, that the place has suffered in its health because its refuse is not removed—that the population suffers from excremental poisoning. Then the Government deals with the drain question only in a secondary way. It says in effect to the locality, "Get rid of your dirt effec- "tively. We do not care how you get rid of it. Your "means we do not care about as long as you effectually "attain the result." If an order is to be made in the matter, details as to drainage may of course be involved in that order, otherwise it is the end, not the means, that Government is interested in. I think that Government primarily has not anything to do with the means. If the result can be got by earth closets, if it can be got by carts, if it can be got by porters carrying refuse on their shoulders, it is no affair of Government, so long as the result is obtained. It is only, I think, on results that Government is entitled to insist: namely, that there shall be freedom from nuisance.

2085. In the one case government interference does not arise until the health is affected, but in such a case as vaccination it does not apply vaccination to a place because there is small-pox there, but generally over the whole country without reference to the sanitary state of the place itself?—Yes, in the same way that it applies the nuisance law uniformly over the country, and says to all local authorities "You "must keep your place free from nuisance," but only criticises the means where the end is not attained.

2086. But supposing that the doctor in some place thought, which many people do think, that vaccination is a bad thing, and said that he would keep out small-pox without vaccination, the Government would not listen to that, but they would say, would they not, you must vaccinate?—Yes.

2087. There is therefore that distinction between the two cases?—Yes, there is that distinction.

2088. But do you think that such a distinction between the two cases would prevent the same inspector being inspector of drainage and inspector for vaccination purposes?—They would be officers of different training; the inspector of sewers is an engineer, and the inspector of vaccination is a doctor.

2089. The object of my question was to elicit your opinion as much as possible as to the maximum of condensation that we can get in inspection for sanitary purposes?—Then I think that those two classes of inspectors must be held as essentially separate.

2090. Laying down as a general rule that the work you want done is simply for the health of the people in the place?—Yes.

2091. Do you think that local laboratories would be necessary for testing water, food, drugs, and things of that sort?—Yes. The view I take of that part of the subject is, that in every quarter sessions division of the country there should be a public analyst appointed by the justices with certain definite duties to fulfil under the Adulteration of Food Act, and in relation to public supplies of water, and perhaps in aid of coroners' courts.

2092. Does the Adulteration of Food Act now take in drugs?—Drugs were brought under its operation by the Pharmacy Act of last session.

2093. (*Lord Robert Montagu.*) You said, did you not, that the General Board of Health some years ago administered the Public Health and the Diseases Prevention Acts?—Yes.

2094. The functions were of two sorts, the one function being municipal control, and the other function being medical action?—That was so.

2095. When the General Board of Health was broken up the one function of municipal control was transferred, was it not, to the Home Office?—Yes.

2096. Was that because it was cognate to the other duties of the Home Office?—I presume so.

2097. And the medical action was transferred to the Privy Council because it was cognate to the ancient duties of the Privy Council?—Yes.

2098. Is not the vice-president of the council considered as an essential lord of the council when any of those sanitary duties are performed by the Privy Council?—He is.

2099. In fact he is the minister of health just as he is the minister of education?—Quite so.

2100. Since the Board of Health was broken up various Acts of Parliament have been passed, have they not, by which the Legislature has recognized that it is the duty of the Privy Council to look after the health of the people?—The Legislature has sometimes acted in that sense, and sometimes in a conflicting sense, sometimes giving such power to the Home Secretary, and sometimes to the Privy Council.

2101. The Privy Council now administers, does it not, the Diseases Prevention Act, for instance, in the case of a great outbreak of cholera?—Yes.

2102. And it also administers the Public Vaccination Act, which applies to 3,500 separate districts?—Yes.

2103. And also the Medical Act of 1858, by which the medical profession is governed, I believe?—Yes.

2104. It also institutes inquiries in matters concerning the public health, does it not?—Yes.

2105. So that every year you make a report to the Privy Council on the inefficiencies of the sanitary laws, with suggestions for the improvement of those laws, and you carry on investigations into the causes and the natures of diseases?—Yes.

2106. As to the question to which central office all those duties should be transferred, it has been suggested to transfer them to the Home Office and to the Privy Council, but I presume as lying between these two offices, it is merely a question as to how much other work either the Home Office or the Privy Council, as the case may be, has to transact?—My department, considered separately, might equally well be under either chief minister.

2107. Have you any other reasons for transferring those medical duties to the Home Office than merely the question as to the amount of duties which the Home Office and the Privy Council relatively perform?—The only reason for which I think it almost inevitable that my office should be transferred to the Home Office is, that apparently the other offices cannot be transferred from the Home Office to the Privy Council Office.

2108. You mean the Local Government Office?—Yes, not only the local government but some of the inspections. I think it desirable that I should be under the same minister with the factory inspectors. There are parts of the factory law which certainly ought to be worked as part of the health administration of the country, recent parts which have originated from our office, and in consequence of health inquiries made there; and those parts where we, as it were, overlap the Factory Commission would I have no doubt be more conveniently worked if we were under the same chief minister.

2109. That objection would equally apply to having a separate medical department, would it not?—If under a separate minister, yes.

2110. If you had a separate medical department would you not equally have to take away from the Home Office the local government action and also the factory laws?—But I presume that they cannot be taken away from the Home Office.

2111. Then you would not have a separate medical department?—Yes, under the Home Secretary, not left isolated under the Privy Council while various

other offices more or less referring to health are under the Home Secretary.

2112. But your objection applies equally to a separate medical department; it must be under the Home Office you say?—I think so. I think that the chief minister of health must be the minister who is over the General Register Office, over the Local Government Act Office, over the Factories, and so forth.

2113. Will you explain to me what you meant by saying that the board of guardians as a larger body is more tangible for sanitary matters than any parish authority?—There are doubts I find in some parishes as to what is meant by a vestry for the purposes of the Act. But at any rate an ordinary vestry has no permanent officer. It meets perhaps once a year and then has *pro tempore* a chairman; but when it is not actually sitting it is difficult to say whether is has a chairman, and it certainly may have no clerk. If you want to communicate with an ordinary vestry in the interval of its annual sittings, how are you to communicate with it unless you go down and nail your letter on the church door.

2114. Your answer has no reference to the size of the authority, has it?—The board of guardians is an authority which always has a definite existence under known legal conditions, and always has a local habitation, and always has several officers with whom one can communicate.

2115. Your answer applies to that alone, and not to the size of the body?—No, not to the numerical body.

2116. Why did you say that you considered that the board of guardians should act in committees, because that the board generally is not fit to act in sanitary matters?—I had no intention at all of saying that it was not fit to act in sanitary matters, but that acting for a very large area it could act more effectively if it appointed committees for divisions of its area; and it might be easily provided that such committees might have added to them, as circumstances should suggest, men not members of the original board of guardians.

2117. (*Sir Thomas Watson.*) What sort of knowledge in your opinion should be required of public health officers or officers of public medicine, and how would you test that knowledge?—If our medical examining boards were all that we hope they presently will be, if the General Medical Council were as effective as no doubt some day it will be, doubtless there would be a degree or qualification of some kind given in these branches of knowledge; so that a member of the medical profession wishing to obtain a certificate of special qualification in health studies, would be able to obtain that qualification at the London University, or College of Physicians, or at some other such tribunal, and then the law could easily make it a condition, directly or indirectly, that this special qualification should be had by every proposed officer of health. I say directly or indirectly, because it might be that the best form of law in which provision for the special qualification of officers of health could be made, would be that the central authority should be empowered to fix conditions of qualification for the office. I am disposed to think that that would be the best form that the law could take; and then of course if the medical examining bodies were to make such provision as I contemplate, that provision would be specially recognized in the central authority's conditions.

2118. Have you had an opportunity of forming an opinion as to the comparative advantages of earth latrines, waterclosts, and ordinary privies?—We are investigating that question at present and I am not at present prepared to speak decidedly on all parts of the subject.

2119. (*Mr. Powell.*) Are you of opinion that the central authority should exercise any power over the appointment, dismissal, salary, and duties of the local medical officers throughout the country, or would you leave it entirely in the hands of the local authority?—I see that there is great difficulty in leaving it absolutely in the hands of local authorities, but yet, on the other hand, I see very great difficulty in enabling a government office to fix rates of remuneration for local officers. I think that the central authority should have power to fix the qualifications, that no man should be appointed to the office unless he has certain qualifications. Perhaps even the appointment and removal might require to be approved by the central authority; but even then there would remain this weak point in the case, that the local authority, if it had a grudge against its officer, could reduce his remuneration to a very low scale. But if that difficulty is to be guarded against, I think it must be rather by direct legislation than by giving control to the central authority. There might be a general rule as to the proportion between the remuneration and the number of population included within the officer's jurisdiction. If that would be possible I should see no objection to it. Otherwise I confess that I do not think it very desirable that the ordinary rules of the market should be interfered with in respect of the commodity of medical officers any more than in respect of other commodities, that the Government should fix a price for medical services as distinguished from other services. Such a system would, I think, be to treat the profession as if it had not reasonable power to hold its own.

2120. Would you define the point which you have mentioned by statute or by an order?—By an order.

2121. (*Mr. Hibbert.*) Have you considered the difficulty, in case the guardians are made the health authority in country districts, that they would be, as it were, under two masters, and would have to report both to the Poor Law Board and to the Home Office; do not you think that some difficulty might arise?—I do not think that that would be a difficulty. There would be entirely different objects. The board would be acting in two capacities, and might keep different sets of books for the two different subject matters. I suppose that this must now be done more or less in many cases where town councils act as local boards.

2122. Would not this difficulty arise in respect of the salary, for instance, that now you cannot alter the salary of any poor law officer without reporting it to the Poor Law Board, and it might be necessary to increase the salary for health purposes. How would you get over that difficulty. Would you leave the power with the Poor Law Board?—It might be necessary that the addition to be made for health services should be to the satisfaction of a fixed legal standard, or of the central health authority, but then of course with the obvious understanding that the Home Secretary (if he were the health authority) would be in communication with the Poor Law Board on such a subject. Or it might be that local health expenses would be paid out of special rates with which the Poor Law Board might have nothing to do.

2123. Do you not think that the duties might often clash in case they were under the two offices?—I do not see that they could easily do so.

2124. With respect to another point, you are aware, I presume, that there are large districts within the Poor Law Unions which are under Local Government Acts, would you give the guardians in those districts the power of interfering with the other districts which were not under Local Government Acts?—My notion about the minimum action of officers of health is this: that wherever a special health district is constituted, the law ought to require a special officer of health; and that in all places outside special health districts, that is to say, in all common country districts such as you are speaking of, each Poor Law Officer should be an officer of health within his own medical relief district, so far as not including any part of a special health district.

2125. You have guardians elected from each parish in the union, and some of those parishes in the union may be under the Local Government Acts would you give the control of the sanitary matters of any other parishes that were not under the Local Government Act to

the whole of the guardians of that union; is it not rather separating what is now considered to be an object, that is to say, representation and taxation going together, to give the whole of the guardians the power over districts which they are not said to represent?—That is a point which had not occurred to me as a difficulty.

2126. But are you aware that there are in many parishes districts which are under the Local Government Act?—Yes. If that should be felt as a probable difficulty, I suppose it would be easy to provide that guardians so related should not be members of the local board when acting as a board of health. Or the committee system which I suggest could be well adapted to meet this case.

2127. I presume you are aware that the salaries of those officers are paid from the different parishes; how would you get over the difficulty of paying the salaries with respect to parishes which were under the Local Government Act; if they were called upon to contribute they would be contributing twice over?—In the same way as the expenses now incurred by the board when acting as nuisance authority.

2128. Did you not say that you would have the medical officers of the union to act as the health officers?—Yes.

2129. How would you pay their salaries?—In the same way as the expenses are now paid which are incurred under the Nuisance Removal Act in the parts for which those officers would be acting. I assume a separate nuisance rate for so much of the union as is not included in the special district.

2130. Then you would require to have a kind of double salary, a salary for poor law purposes, and a salary for health purposes?—Yes.

2131. Would not it be better, taking your basis of poor law unions, to have a board specially elected for purposes of health, instead of combining it with poor relief, taking the same area as the poor law unions?—You would lose some important advantages, I think, by that plan. In having the destitution authority as it stands, you have its officers, you have especially its clerk, who is generally if not always a legal officer, and it might be a pity to lose him. There would be very little change of the existing system.

2132. Would not it be possible for the new board to make arrangements with the clerk of the poor law union, and to make use of the medical officers of the poor law union for their purposes?—It would be easy to make arrangements, but unless the law provided for such arrangements being made, they might or might not be made; and if the law did provide it, this would be exactly what I propose.

2133. With respect to the Lunacy Commissioners, I see by a reply that you gave the other day that you suggest that they might be placed under the Home Office?—They are under the Home Office now.

2134. Is it not a fact that they are under no authority, either of the Home Office or of any other minister?—They are subject to the Home Office, but, except as regards filling vacancies and certain appeals to the Home Secretary, I suppose they may be regarded as a separate department.

2135. I believe that they do not consider themselves to be placed under any overriding authority; but would not it be better to have the Lunacy Commissioners placed entirely under the authority of the Poor Law Board, the Poor Law Board having already the treatment of lunatics in the workhouses?—I do not think that the Poor Law Board should inspect lunatics generally; but so far as lunatics are destitute persons, so far I presume they are under the charge of the Poor Law Board and ought to be.

2136. Would not it be desirable to have both destitute lunatics, as well as other lunatics, placed under one authority?—But if under one authority I think not under the Poor Law Board.

2137. Then you think it is desirable to take away destitute lunatics from the control of the Poor Law Board?—Of the two courses, yes.

2138. But is it not objectionable that they should now be under two different authorities?—I think hardly objectionable. For present administrative purposes, destitution is to be looked at, I think, as a unity, as one object, as one head of classification. Ordinary poor law medical relief must be considered as a mere sub-section of that section. So I think also must pauper lunacy.

2139. Is it not objectionable that the accommodation in the workhouses for lunatics should have to pass not only the Poor Law Board but also the Lunacy Commissioners?—That rather forms part I think of the very difficult question whether medical relief altogether ought to go with the relief of destitution or not. I confess I do not see my way to separating them, although I know it to have been very strongly urged before parliamentary committees and elsewhere that a separation should be made.

2140. (*Lieut.-Col. Ewart.*) You are aware, I presume, that in certain classes of government inquiries it is a common custom to send down two commissioners or inspectors of different professions to make a combined report. Supposing that health arrangements were carried out under the Home Secretary, would not you have the advantage of securing more prompt action by sending down an engineer inspector and a medical inspector associated for important inquiries?—In some cases that would be a convenience, and in some cases we have by friendly concert with the Local Government Act Office done that; but speaking generally I do not think that we want two inspectors at once.

2141. You would be able at once, would you not, to adopt that course of action if you had both classes of inspection, the engineering class and the medical class, under the same Secretary of State?—Yes.

2142. You have spoken of the question of extending the Contagious Diseases Act; are you aware whether or not it has had a very beneficial effect upon the health of the army and navy where it has been brought into operation?—I believe that good has been done by it, but I am not able to speak confidently as to the extent of that good with regard to true syphilis. I think that we have not yet sufficient information upon the subject to speak positively about it.

2143. You have not yet had any statistics, I suppose, since the Act came into operation?—I have not seen any statistics that have satisfied me upon that part of the subject.

2144. Have you heard that a difficulty in working it has been experienced in cases in which there is an area not under the Act in the immediate neighbourhood of an area that is under the Act?—Yes, I have heard of that, and I have no doubt that the difficulty ought to be got over for the sake of the law which is being tried. It might very easily be got over in either of two ways. Either the central authority, acting for the purposes of the Contagious Diseases Act, might have ample power given to it to extend areas by an order in council; or the law might stand for the purposes of that Act as it stands for the purposes of military and naval stores, that each given name of a place should include a circle of such and such radius, say 15 miles radius. Either of those arrangements would meet the difficulty, I think, to which you refer.

2145. If the inhabitants of a town situated in the neighbourhood of one of those towns which has been declared under the Act are willing to accept the Act, do you see any objection to their doing so, that is to say, that there should be permissive legislation in that locality?—If your question relates to the civil population, I do see a very serious objection. I think that such legislation would pledge Parliament to the view that to deal with the venereal diseases of the civil population is part of its business, and I think that it should be very chary of accepting that position. If the principle is accepted that it is part of the business of the Government (whether local or central) to deal with the venereal diseases of the common population, I confess for myself that I do not see how that obligation is to be fulfilled. But that principle would be, I think, affirmed, and the consequent responsibility ac-

cepted, if permissive legislation begins. Permissive legislation we all know is a sham in these matters. We know what permissive legislation has been about drainage and water supply, the merest sham. If there were general permissive legislation for local authorities to take action for the sanitary supervision of prostitutes, nothing would be done, but there it would be in the statute book that this was a matter that Parliament felt it right to deal with. The venereal diseases of the civil population cannot be preventively dealt with except by compulsory legislation, and compulsory legislation on a large scale, and I do not see my way to that.

2146. By what department of the State is the Contagious Diseases Act now administered?—By the War Office and Admiralty.

2147. Would you leave that as at present, or supposing you combined the health branches under the Home Office, should you recommend the Home Office to work that also?—No, I should strongly advise the Home Office to have nothing to do with it. I look upon these as purely departmental matters. The position that I would contend for here is, that the cases of the army and navy are special cases; special in two points of view: special because the general public suffers heavily in pocket by the quantity of venereal diseases in the army and navy, and so is pecuniarily interested in stopping those diseases; and special also in this other sense, that the public, keeping for its own purposes great masses of men unmarried, has a sort of moral responsibility for the moral and physical consequences of that mode of life. Those are special cases, and they are departmental cases, and I would let each department deal with its own prostitutes.

2148. But are you aware that the working of the Contagious Diseases Act in any place depends mainly upon the magistracy and the provision of hospital accommodation?—Yes.

2149. Do not you think that that might well come under the same administration as other health matters, as far as the central authority is concerned?—I think that it would be very inconvenient if the Admiralty or the War Office should be able to say to the Home Office, "We want additional accommodation for sick "prostitutes, our prostitute accommodation requires to "be enlarged; will you, the Home Office, construct "an additional hospital for us?" It would I think be a very unworkable state of things that any one department for its own purposes should be able to call upon another department to spend money.

2150. With regard to the question which you answered upon the subject of the ventilation of sewers, do not you think that if you had a sewer thoroughly trapped, with discharges probably below low-water mark, it is preferable to have a special shaft ventilation to having merely a rain-water pipe ventilation for the sewer?—I guarded myself against saying mere rain-water ventilation even for any case.

2151. Do not you think that there is great risk in rain-water ventilation when you consider that rain pipes are often put together with open joints and are liable to breakages, to become disconnected with the walls, and to pass windows?—They are liable to those risks, but any such danger to the house as compared with the danger of an unventilated drain with its atmosphere under pressure ready to escape into the house as often as the watercloset is used, is insignificant.

2152. In fact you mean that a rain-water pipe is better than nothing?—Very greatly so.

2153. But if you had the choice of proper shaft ventilation you would prefer, would you not, the shaft ventilation?—I think that the one does not in any degree exclude the other. A system of sewers ought to be ventilated very extensively at every convenient place. Generally speaking it has ventilation, and ought to have very abundant ventilation, apart from houses; but in addition, I think that the rain-water pipes should also be a mode of ventilation, such ventilation being a special safeguard for the house.

2154. Supposing you carried out a system of local health authorities throughout the country, do you not think that it would be desirable that there should be some system of inspection of houses and cottages, especially those which would be occupied by lodgers?—Yes, I should quite include that under the ordinary duties of a nuisance authority.

2155. (*Mr. Cave.*) Is there any provision in the law for the payment of the expense of extending medical relief to those persons who are above paupers?—Under the Diseases Prevention Act there is.

2156. Under that Act, in the case of sailors on board ship, I think the captain is responsible for the expense; but is there any provision for the payment of expenses in any other part of the Act?—I apprehend that the power of giving medical relief is universal. I have always regarded it so.

2157. And then the expenses fall upon the rates?—Yes.

2158. (*Mr. Whitbread.*) With regard to the prevention of contagious diseases, do you believe that on the continent, and in countries where very strict regulations are in existence with the view of preventing the spread of contagious diseases, there is any real security obtained thereby?—I should like to be able to answer that question with precise quantities, but materials do not exist for so answering it. As regards Paris, of which I have heard most, it is said that very large quantities of true syphilis are prevailing; whether a great reduction is made by the system of inspection I cannot say.

2159. But very strict regulations are at the same time in force in Paris?—Strict regulations are in force, far stricter regulations than it would be easy to get applicable here; but the Paris system professes to break down with the difficulty of what is called clandestine prostitution; there being very large numbers of venereally diseased women who cannot be defined as prostitutes for the purposes of the system.

2160. I daresay you have seen some returns from Gibraltar upon the subject, and you are aware that at Gibraltar the strictest regulations are in force, extending even to the power of banishing women from the rock altogether, and that there is at the same time an alarming amount of disease prevalent?—I am not accurately informed of those statistics.

2161. (*Lord Robert Montagu.*) Are you aware that there is no provision of the kind existing in Rome?—I am not aware.

2162. Have you heard that there was a very great difference in the health of the French soldiers in that respect during the time when they were in France, and when they were in Rome?—I am not cognisant of the French report upon that subject.

2163. (*Mr. Whitbread.*) Have you not seen some statistics which were procured some years ago upon this subject through the Foreign Office, which brought one to the conclusion that relying only upon the statistics, the existence of very strict law upon the subject was in reality not preventive of disease?—I have not yet completely mastered those statistics, so that I do not like to speak about them. But without reference to such materials as have been referred to, which I think are very imperfect, the knowledge that the medical profession has of the laws of syphilis tells me that there would be great difficulty in suppressing syphilis by means of any inspection of prostitutes.

2164. (*Mr. Paget.*) In answer to one of the questions put to you by Sir Thomas Watson, you spoke of a difficulty in respect of patronage and payment in the appointment of inspectors. Have you considered whether a system could be established by which the inspectors of large districts could be appointed by the Government rather than by the local authorities?—A certain number of government inspectors could easily be and ought to be appointed as general superintending officers, acting over large areas; but the every-day sanitary duties of districts, the giving of such medical services as would be wanted in aid of the nuisance authority, the certifying of the causes of death with reference to persons who had not had

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medical attendance during life, and duties of that sort, could not be done by Government officers.

2165. Would you think it advisable that every part of England, if brought into districts, should be under the inspection of some one appointed by the central authority who might have district inspectors acting under him?—Yes.

2166. So that no part should be free from inspection by some person wholly disinterested in the district?—Quite so.

2167. Who should not be liable to appointment or to reprimand or to dismissal by any local authority?—Quite so.

2168. Have you formed any opinion as to what number of inspectors of that class would be required for the whole country?—I should think a very good supervision of the nuisance authorities of the country could be maintained with eight, and at first, while feeling one's way with such a system and getting it into work, probably one would prefer not to have quite so many as that.

2169. By nuisance authorities I presume you mean the nuisance authorities with the enlarged powers which you suggest that they should possess?—Yes, certainly.

2170. Can you state at all what you think would be a reasonable stipend for each such inspector?—At present prices you might probably estimate his salary and expenses together at from 1,200*l.* to 1,400*l.* a year.

2171. That would be on condition, would it not, that he should nowhere pursue private practice?—Yes.

2172. You would set him entirely free from all other work in his profession?—Yes.

2173. A question was asked you with respect to the education which you would think necessary for those inspectors. Do you hold very strongly with the opinion that they should be specially educated for the purpose?—They should certainly be specially qualified for the purpose, but if by "educated" you mean that they should have gone through particular courses of study which you could beforehand define in precise terms, certainly not. The best of all preparations for such an office might have consisted in having been officer of health for a district for a certain number of years. In the appointments to which I have already to-day referred, the appointments that have lately been made in our office of two inspectors to act in general sanitary work, the one, Dr. Buchanan, had been physician to the Fever Hospital, and had been officer of health for many years to St. Giles's, and had been working occasionally for us for many years in inspection. Of course those qualifications count for much more than any qualification which one could express in the terms of a medical diploma, as that he was a Fellow of the College of Physicians, or was a doctor of the University of London.

2174. Or if such a title were ever given, a doctor of State medicine?—If there were doctors of State medicine it is very probable that when such a system got into operation, the Government inspectors would be chosen altogether out of that class; but then, within that class, what would determine the choice of the individual would be a knowledge of his individual antecedents, what work he had done, and how he had profited by it.

2175. So that speaking generally it might be expected that you would find as good a class of men for inspectors amongst the generally educated medical profession as amongst any separate class who might be deemed particularly educated for the purpose?—The special education could be acquired by any man of good intelligence and good general education very rapidly, and the other qualities could not.

2176. Do you think that great good would come from the appointment of well-educated inspectors with reference to improving the general conditions of the sanitary law?—Yes, their influence would in that respect be invaluable.

2177. Would they hold anything like the position of general educators of those who work under them?—Yes, eminently. In superintending public vaccination, which we have in the last few years metamorphosed, the good which we have done has been in great part in that way through the educational influence of our inspectors.

2178. I may presume that I am not wrong in thinking that there is still a great deal of work of mere inquiry to be done for the improvement of sanitary science?—A great deal.

2179. Does it appear to you that there is any satisfactory manner in which that can be done except by the appointment of inspectors?—I consider that agency indispensable.

2180. You would not expect it to be done by those who are casually appointed by the local authorities to look after any narrow district?—No, certainly not.

The witness withdrew.

Rayner, Esq.

(12.) Joseph Rayner, Esq., examined.

2181. (*Chairman.*) I think you are at this moment town clerk of Liverpool?—I am, and have been since March 1866.

2182. Have you not been connected with the local government consecutively of Huddersfield, Bradford, and Liverpool?—In Huddersfield from 1851 to 1861. I was not connected with the local government, I was in practice there as a solicitor; our firm were local solicitors for Sir John Ramsden and many of the principal landowners; we were concerned also for some of the local boards in the district, but not for the municipal authority of Huddersfield. At Bradford I was town clerk from 1861 to 1866, and also in practice privately as a solicitor.

2183. Have you also visited Sheffield for the purpose of giving the Commission evidence connected with that town?—I took the opportunity of visiting Sheffield during the Whitsuntide recess mainly for this object; Sheffield being a very big town and having a very little river, I went to see exactly what their local legislation was, if they had any.

2184. Have you any experience as to the local government of country districts?—I have been concerned for a number of local boards and for surveyors of highways, and against them also, I may say, on many occasions.

2185. Will you give us information relating to Huddersfield, with which you were connected more or less from the year 1851 to 1861, and first of all, can you tell us the population of Huddersfield?—The population of the township of Huddersfield in 1851 was 30,876, and in 1861 34,874, and the estimated population of the borough of Huddersfield, which was only incorporated on the 7th of July last, is 73,000.

2186. What is the area of the borough which was incorporated last year?—The area within the borough is 10,476 acres, and that includes the township of Huddersfield and certain townships and part of a township in Almondbury; they have embraced a district on the other side of the river Colne, which is the boundary of the parish and township of Huddersfield.

2187. What is the local government of Huddersfield in sanitary matters?—The local government of Huddersfield in sanitary matters up to the present time is the Huddersfield Improvement Act of 1848, which incorporated the Towns Improvement Clauses Act and the Commissioners Clauses Act, with certain special requirements, one of them being that the lord of the manor, who is the owner of the soil of nearly the whole town, has power to appoint three out of 21 commissioners. There is no special health legislation except under the Towns Improvement Clauses Act, but as all property is held under leases from Sir John Ramsden, there was not much necessity for it as regards buildings.

2188. When you said that there was a Local Government Act at the present time, do you mean that which has existed since the incorporation?—There is now an incorporation under the Municipal Act.

2189. What would be the local authority under that Act?—The local authority of course is now the town council, to whom the powers of the commissioners have been transferred, but they have not done more than that. They have a bill now in Parliament for an increased water supply, but beyond that they have done nothing but get the powers of the commissioners transferred. There were byelaws in some parts of the district which are incorporated with the borough, building byelaws and street byelaws, but none in Huddersfield itself.

2190. The town council, then, will not have the power which the Local Government Acts would give it?—No, not until they have adopted the Local Government Act. I believe they have not done that yet. They can do it at any time by resolution by a certain majority, and they can adopt the whole or part, as they think fit.

2191. Will you tell us, from your own experience, how the former local government acted upon different subjects, taking in the first place building matters?—With regard to Huddersfield, there were no building regulations at all in force, nor are there any now, but in the adjoining townships which have now been taken into the borough, there were building byelaws which are somewhat similar to the model form issued from the Local Government Act Office. There is nothing special in any of them.

2192. How has the water supply of Huddersfield been regulated?—It has been regulated under local Acts. The scheme has been a very small one up to the present time, the capital being only 50,000*l.*, but the corporation have now a water bill before Parliament to get them a larger supply from an independent district. And with respect to byelaws the only observation which I have to make is this—that they propose to take what I have not noticed before, namely, to take powers, and very absolute and peremptory powers, with regard to byelaws, to prevent waste and contamination, and misuse of water, and the abuse of it in a variety of ways, which I think is very desirable. It is just one of those subjects upon which byelaws may from time to time be properly made.

2193. Do they adopt byelaws from the model form of byelaws?—No, I have not noticed that subject to be dealt with by byelaws before. In Liverpool we dealt with it by special legislation in addition to the Waterworks Clauses Act, and in Bradford also. I have never noticed any such power in the model byelaws, but I think it is a very effective provision.

2194. What is the nature of the water supply of Huddersfield?—It is a gravitation scheme; the gathering ground at present is very limited, the reservoirs are two or three miles from the town, and they are now going some eight or nine miles to the moorland districts, where they will have a larger gathering ground and of course a very much better supply; and they propose to supply the villages they pass through.

2195. What has been the death rate in Huddersfield?—The death rate for the last three years has been 24·4 per 1,000 within the township of Huddersfield, and 23 per 1,000 within the limits of the new borough, of course the enlarged limits including a certain portion of agricultural area.

2196. Is that a high rate?—It is a very moderate rate for a town.

2197. What is the outfall of the drainage in Huddersfield?—The outfall at present is into the river Colne, which is a tributary of the Calder, about a mile below the centre of the town.

2198. And the drainage goes into the river?—Yes, the drainage goes into the river, hitherto without objection, I believe.

2199. What is the plan as to waterclosets?—They are very small in number; taking the whole number of privies and waterclosets, 1 in 15 is the proportion of waterclosets.

2200. Proceeding to Sheffield, how is Sheffield governed?—Sheffield is governed by a town council acting as a local board of health, the water supply being in the hands of a company, and they have made byelaws under the powers of the 34th section of the Local Government Act.

2201. What have you to say about their byelaws?—They are upon the model that was issued from the Local Government Act Office, with certain amendments; there is nothing special in them.

2202. How has the local government acted as to different subjects of local government; first, as to slaughter-houses?—The slaughtering of cattle and sheep is in public slaughter-houses belonging to the Duke of Norfolk, but as to other animals it is done in private slaughter-houses, and in the butchers' shops. I visited the slaughter-houses, and I was not very favourably impressed with the condition of the public slaughter-houses; I did not visit the private ones. I may say that Sheffield is as free from special local legislation as any large town that I know. Under the Local Government Act the town council are the local board of health, and they have made byelaws with regard to slaughter-houses, streets, buildings, hackney carriages, and a variety of other matters—all matters upon which most towns generally make byelaws.

2203. As to Bradford, where you were town clerk from 1861 to 1866, what is the area of the borough?—6,508 acres.

2204. What is the population?—The estimated population in 1868 is 134,000.

2205. When was Bradford incorporated?—It was incorporated on the 9th of June 1847. Bradford is a most remarkable instance of increase of population. In 1801 the population was only 13,264, in 1841 it was 66,715, and at the census of 1861 it was 106,218. Bradford is very favourably situated for taking statistics, because it comprises exactly four townships. The boundaries of the borough are conterminous with the boundaries of the union, so that there can be no mistake about the statistics that have been taken from time to time.

2206. Do you mean that the Bradford poor law union comprises four townships?—Yes, it comprises four townships, and the four townships comprise the borough, so that the boundaries are as convenient as it is possible to have them.

2207. What is the local government of Bradford?—The local government is by a charter granted on the 9th of June 1847, and by the Bradford Improvement Act of 1850, under which the council were constituted the local board of health, and of course they took the benefit of the subsequent Local Government Acts of 1858 and 1861 in their entirety.

2208. What public Acts does the Improvement Act incorporate?—The Improvement Act, 1850, incorporated the principal parts of the Public Health Act, 1848, the Towns Police Clauses Act, 1847, the Towns Improvement Clauses Act, 1847, the Gasworks Clauses Act, 1847, and Markets and Fairs Clauses Act 1847.

2209. In fact almost all the Clauses Acts of that year?—Yes, almost all that had been previously passed, were incorporated.

2210. How is the water supply of Bradford regulated?—The water supply of Bradford is regulated mainly by the Corporation Waterworks Act, 1854; that was amended in 1858, and again in 1862, but substantially the supply is under the Act of 1854.

2211. Was that a local Bradford Act?—Yes. It is a gravitation scheme exclusively, the source of supply being a large spring in one of the valleys running into Airedale, and large gathering grounds both in Airedale and Wharfedale, and the compensation reservoirs for the millowners are upon separate gathering grounds; that is to say, they do not deliver so much compensation water from their reservoirs, but they give the millowners a separate gathering ground and reservoir for themselves, and then they are free from all further

responsibility. Whether the supply is sufficient for the millowners or not, is of no moment to the corporation.

2212. What is the provision of the Bradford Waterworks Act as to easements?—There is a special provision in that Act which is found very useful of taking a conduit by way of easement, not by way of purchasing the fee simple. There was some evidence given upon that before this Commission by Mr. Norris, the town clerk of Halifax. In the Bradford Act there was a special power to take easements. In the first Dewsbury Waterworks Act they had not that power. In the Public Health Act, substantially it is a question of easement, because the board have power to put down sewers upon payment of compensation; but there really is no difference except in this way, that if the Act of Parliament does not say that the authority is not to fence off, that is to say, if it leaves it open to the claimant to contend, that if the board take the fee simple, the local authority may fence off, then of course it lets in the claim for severance, and upon that ground I have claimed severance. I was concerned in the first Dewsbury Waterworks Act for Sir Joseph Radcliffe and other landowners, and I claimed severance all along the line; whereas if they had got the Bradford clause they would have avoided all that; but except that, it makes no difference whether you take an easement or the fee. The main point in assessing compensation is this, whether your sewer or your conduit, whichever it may be, passes at such a level as that it will interfere with the cellarage of the property when it becomes building ground, and as to the probabilities of its becoming building ground, those are really the tests. I think it is very desirable that all public bodies should have power to take an easement, and not be compelled to buy the fee.

2213. What do you say about the Bradford building byelaws?—The Bradford building byelaws were only passed in 1860, and they led to a great deal of agitation, which was just concluded when I left in March 1866; and they were re-enacted in the following June, I think, with certain concessions. In 1865 there was a very great scarcity of dwellings in Bradford, which was attributed to the action of the byelaw of 1860, which required positively and without any discretion, a certain open space at the rear or side of each house; and the effect of that byelaw was to prevent a class of house that had been built until that time, that is to say, back to back houses in long rows, either with the privies congregated at one end, or with the privies behind the back house, and with passages through from the street. Of course the effect of that byelaw, without any discretion being reserved to the town council, was to prevent any houses being built of that sort. You cannot build more than four back to back houses, if you are to have an open space at the rear or side of each house. I do not think that that was the cause of the scarcity, but the agitation led to certain concessions which were to a great extent temporary, that is to say, with regard to land which had been laid out, or which the owner was under covenant to lay out in a particular way, having regard to the class of house, the back to back house, which was built at that time, and there was also a concession upon certain special and stringent conditions, so as to secure a certain distance between the door or window and the privy and ashpit, and a certain distance between the street and the privy and ashpit.

2214. (*Mr. Powell.*) Have those concessions proved satisfactory?—I believe so. I believe Mr. Ripley has built a very large number since the alteration was made in the byelaws.

2215. (*Chairman.*) Are those back to back houses?—No, his are not; but I think people under covenants who had land set out, have built upon it under the concession. Mr. Ripley has observed the byelaws; I believe he has observed the byelaws of 1860. He has not availed himself of the concession. With regard to street improvements at Bradford, I may mention that they have all been carried out under provisional orders under the 75th section of the Local Government Act of 1858, and improvements to the extent probably of 200,000*l.* have been carried out.

2216. Are the council the burial board?—Yes, they are the burial board, and they have also established baths and wash-houses, and in the year I left they acquired the fairs and markets also, so that they have now everything connected with municipal government except the gas, which is in the hands of a company. They have got the markets, the fairs, the water; everything, in fact, except the gas.

2217. Now we will proceed to Liverpool; what is the area of the borough of Liverpool?—The area of the borough is 5,210 acres, built upon 4,149, and unbuilt upon only 1,061 acres.

2218. What is the population?—The population in 1861 was 437,740, and it is now estimated to be 500,000 as nearly as can be calculated.

2219. What is the sanitary local government of Liverpool?—The sanitary local government is under three local Acts, the Sanitary Act of 1846, the Amendment Act of 1854, and the Amendment Act of 1864, which is a special piece of legislation. The local Act of 1846 deals practically with all the matters that are dealt with by the Public Health Act of 1848, and the local Act of 1854 is an amending Act; the two together comprise substantially, with certain exceptions, all the powers in the Public Health Act of 1848, the Local Government Act of 1858, and the first Nuisances Removal Act; it was in fact local legislation just in anticipation of the public legislation.

2220. I suppose in Liverpool we may say that the whole local government is administered without any interference on the part of the central government?—Not altogether so, for instance, we are under the Sanitary Act of 1866, and we had an inquiry under the 49th section. We are subject to the general Acts to a great extent; I may mention that there are just two exceptions which are important in a sanitary point of view; the first is that under the Act of 1846 the council are absolutely required to remove all soil, ashes, rubbish, and filth from the houses of the inhabitants, whilst under the Local Government Act, the local board may either contract for removal or may make byelaws compelling the inhabitants to remove them for themselves. The Act of 1846 also contained a requirement as to the cubical contents, or, at all events, the superficial area of dwelling houses, *i.e.* of one room in a house, and of the window. With those two exceptions I do not think there is anything materially different from the public Acts of 1848 and 1858.

2221. Do you mean that those are the only two points in which there is anything in which the law of Liverpool differs from the general law?—Substantially those are the only two very material points; there is another point which perhaps might be usefully annexed to the public Acts. I understand that the use of offensive matter in filling up ground has been prohibited since 1846; it has been such a great nuisance in some of the outlying districts of Liverpool, St. Helen's, and places where they accumulate large quantities of chemical refuse. It is prohibited by penalties under the local Act of 1846.

2222. Was there not at one time a very large cellar population in Liverpool?—There was.

2223. How is that now?—The requirements as to the cellars are pretty much the same as they are in the Public Health Act; cellars in courts are absolutely prohibited by our local Act.

2224. When was that prohibition passed?—That was in 1846, I think.

2225. In fact there is no population living in cellars now?—I am sorry to say that there are yet cellars, that is, cellars which comply with the provisions of the Act, of which a certain proportion is above the level of the ground; the absolute prohibition of them is restricted to cellars in courts.

2226. What is the requirement of your Act with regard to the size of rooms in houses?—That each

house must have at least one room containing 108 square feet, which is a very moderate requirement, and one window of certain dimensions, to open to the extent of one half of the whole area of the window.

2227. What is the requirement of your local Act as to waterclosets?—The 15th section of the local Act of 1854 has been held by the Court of Queen's Bench to entitle the corporation absolutely to require the conversion of privies into waterclosets if they think fit, in the case of Rook *v.* Higgins, and the same decision was come to by the court under one of the Metropolitan Acts.

2228. Practically, have waterclosets been substituted for privies?—To a very large extent.

2229. Even amongst the poorer dwellings?—Chiefly amongst the poorer dwellings. There are no less than 13,229 which have been converted under this clause in the local Act, from December the 31st, 1862 to the end of 1868.

2230. Is it found to work satisfactorily upon the poorer dwellings, where waterclosets can be adopted?—The opinion of our medical officer of health is very strongly in favour of them. But perhaps I ought to mention that in Liverpool we have this, we first of all have a very fair water supply; and, secondly, we have a complete system of sewerage, and the sewers are well ventilated; and, thirdly, we have got a tidal river with a very great scour, which takes everything clean away to sea.

2231. Do you drain into the river?—Yes, but there is an intercepting sewer, which takes the sewage now down towards the north end of the town. The sewers do not run as they formerly did, straight to the river to the west, but there is an intercepting sewer which takes the sewage to a point some distance down below.

2232. But at that point the river is polluted with all your sewage?—It all goes into the river at present, but we have a utilization scheme which is just commencing.

2233. What is the provision in the local Act as to smoke?—As to smoke we have a very excellent provision taken from one of the early Metropolitan Acts, which we think quite sufficient for our purposes, with the exception perhaps of steamers that are sea-going steamers; we find a little difficulty with them, but practically, I think, there is not much to complain of. There are very few manufactories in Liverpool.

2234. Is your smoke generally consumed?—It is consumed so far as it can practicably be consumed, but we very rarely have to take any proceedings, except against steamers, and, less frequently, against sugar refiners and bakers; we have occasionally had informations against manufacturers, but very rarely, and we have found generally that the fault has arisen from the neglect on the part of the workmen, and that the appliances have been sufficient if they have been properly worked.

2235. Is it the fact that you did not proceed against them, or is it that the smoke nuisance was removed?—We have proceeded against every one, with the exception of one or two cases of iron foundries where we found our powers not sufficient.

2236. How far do your provisions as to smoke differ from those in the Smoke Prevention Act of 1866?—We find it better to proceed under our local Act than under the Sanitary Act of 1866. I think chiefly because we get a little higher penalties, which have a more deterrent effect under our local Act, and we avoid preliminary notices.

2237. In what particulars do your powers fall short as to dealing with iron foundries?—Because I think we could not prove before the magistrates that they had not consumed their smoke as far as was reasonably practicable. There has been a decision which is reported from Birmingham upon that subject. The words there, I think are the same, "as far as possible."

2238. What are the sanitary provisions of the public Acts and the Local Government Act which the council have adopted?—The only sanitary provisions of the Public Health Act, and the Local Government Act, are sections 64 of the Public Health Act as to offensive trades; section 76 of the same Act, and section 51 of the Local Government Act of 1858, as to the supply of water; section 28 of the Local Government Act of 1861, containing a provision with respect to the bringing forward of buildings; section 32 of the same Act of 1861, paragraph 4, enabling the council to make byelaws for the prevention of certain nuisances, and a portion of section 34 enabling the council to make byelaws with respect to new buildings.

2239. Under the building byelaw what provision is made as to spaces around dwelling houses?—We require a minimum open space of 150 square feet, with a certain width across at the rear or side of each dwelling house, which prevents back to back houses.

2240. What is your provision as to paying compensation for the demolition of houses with a view to improvement?—We have a special Act, the Liverpool Sanitary Amendment Act, 1864, under which the medical officer of health makes a presentment to the town council as to the demolition of certain buildings, and upon that being confirmed by the quarter sessions the demolition takes place, the owner having the option of either keeping the site or not as he chooses, the corporation paying full compensation for the house that is demolished. That power has been exercised to a very large extent.

2241. Do you believe that that is a single instance of a local Act making such a provision?—I am not sure whether Glasgow has not got a similar Act, but it is the first—I will hand in the last report of the medical officer (*handing in the same*). He reports that it is necessary to knock out one or two houses here and there; that is, of course, to improve the ventilation.

2242. How far do these provisions which you have described coincide with the provisions of the Artisans and Labourers' Dwelling Houses Act, 1868?—The powers in Liverpool have been applied chiefly to courts. Until I have seen Mr. Torrens's Act tested I should doubt whether it would not prove a dead letter. I will explain to the Commission how it strikes me. In our sanitary Act the word "premises" means "a court of houses," but in Mr. Torrens's Act you will find that "premises" means "a dwelling house or inhabited building." It is very easy for a medical officer to say, and for the grand jury to find, that a court of houses, taking the court as a whole, is unfit for human habitation without one or two houses being knocked down, and the privies, which are generally at the entrances to courts on both sides, being taken away altogether, and waterclosets substituted in a different place; but when you come to deal with Mr. Torrens's Act it would be a difficult thing to persuade a jury to find that any one house is unfit for habitation, because it is not a house in itself regarded as a single house, but it is a cluster of houses, regarded as a court, which constitutes "premises" unfit for habitation. I should be very much afraid that Mr. Torrens's Act will not prove of any advantage.

2243. Would not that necessitate proceeding against all the houses, and supposing there was a cluster of unhealthy houses, under Mr Torrens's Act the proceedings would be against each of them?—Yes, but it would be very difficult to say that any one of those houses was unfit for habitation, speaking merely of the particular house.

2244. You mean that it does not provide against putting the houses so close together?—No. Mr. Torrens's Act is founded upon a sound principle, ours is not founded upon a sound principle, because with us we have to pay the whole compensation to be assessed under the Lands Clauses Act, which is an expensive proceeding in dealing with a court of houses. In taking a single court of houses under the Lands Clauses Act, if we do not settle it, the costs are more than the house is worth, a great deal. But Mr. Torrens's Act is founded upon a sound principle, that is to say, that the owner must pay the whole of the costs and make his property fit for habitation. Our

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local Act is not justifiable upon any principle, but it has been a very good expedient, and we have done a great deal of good under it, there is no question about that. I may mention that we have spent about 70,000*l.* under the Presentment Act of 1864 in dealing with houses. The average valuation under the last was only 70*l.* We have dealt with about 700 cases.

2245. Have you ever had any litigation on questions of compensation, or any attempts at fraud upon you?—We have scarcely had a single case of compensation under the Sanitary Amendment Act of 1864. Of course it would be our policy to give people 50 per cent. over the real value sooner than go to the Lands Clauses Act to assess the compensation.

2246. Might not a man almost attempt a fraud upon you by building with a view to compensation?—No, I think not. There are no court houses now being built, and this Act has been exclusively, or almost exclusively, applied to the removal of courts. The old Liverpool courts are built with very narrow entrances, and, as a rule, the privies are arranged on each side of the entrance, so that by the only access of the air to the court, it has to run the gauntlet of the privies on each side and there was no thoroughfare, so that they were very bad places indeed until this Act came into operation.

2247. Have you passed special Acts for the purpose of widening streets?—Yes, we have passed a great many Acts, the last three Acts for that purpose being the Acts of 1864, 1865, and 1867; and there is no doubt that the execution of the improvements under those Acts has very materially improved the health of the town, by driving new streets through densely populated districts. The expenditure under the Act of 1864 is 550,000*l.*, which is only just completed, under the Act of 1865 it is 200,000*l.*, and under the Act of 1867 the borrowing powers are 700,000*l.*, making altogether under the three Acts 1,450,000*l.*, and the amount actually expended up to the 31st of August last under the three Acts was 538,867*l.* We have scarcely begun the Act of 1867 yet. Under these Acts I may mention that the Lands Clauses Act is the process, and it is incorporated, but the Act of 1867 does contain some special provisions, the first of which I would mention is the 34th section, for improving the lines of streets. It is to the same purport but much more effective than the 35th section of the Local Government Act, 1858, and in two or three respects it is a much better power than the 35th section.

2248. In what respect is it better?—Under the Local Government Act (we had an illustration of it at Bradford) you can only give notice to improve the line when the building is actually down, and you require to be very sharp sometimes to get your notice approved by the council and given to the man just at the moment when his building is down and he has not begun to rebuild, because you cannot refuse to approve his building plan. The consequence of this was that we had a great deal of trouble at Bradford. That is prevented under our section, because we may give him notice when we first get intimation, without the building being down, so that he cannot begin to build it up again. Secondly, under the Local Government Act there is no power to add to your street the ground that you cut off by the improved line; it remains the property of the man, and you have to pay him the same compensation probably, as if you took the ground for the street, because that property might have a building put upon it. The most important thing is this, that under this section and under another section in the Towns Improvement Clauses Act there is no power whatever to enforce the Act except by indictment. There are several cases reported of indictment. There is one leading case of the Queen against Fulford, where a man was indicted for bringing forward his house beyond the line of the house next door to him. We have taken care in our Act of 1867 to take penal clauses inflicting penalties, and also giving us power to pull down if he should build in spite of the notice. I may mention that I think there should be some more economical mode of assessing compensation in those cases than the present one. The only mode of assessing compensation, if the parties disagree, is the Lands Clauses Act, which is a frightful penalty upon everybody who exercises it in small matters.

2249. What would you suggest?—I should think the county court or some local tribunal might settle the matter. It is simply giving compensation for improving the line of street, that is to say, for taking a slice off the front when the house is taken down. You do not meddle with the house under our Act of Parliament till it is taken down, but you may give the notice before it is taken down.

2250. What are your regulations as to cattle?—We also in our Act have special provisions with regard to the driving of cattle through the streets, all of which are very important, and we find that they work very usefully. We take power to license all places for keeping cattle (including in the term "cattle" "pigs,") within the borough, which we find exceedingly useful.

2251. What is your regulation as to slaughter-houses?—As to slaughter-houses there is a good deal of complaint that our legislation requires amendment. We tried, and succeeded in the House of Commons in getting a bill to abolish altogether slaughtering in the town; but I am sorry to say that we were defeated in the House of Lords two years ago. We had made admirable arrangements, as we thought, for one slaughter-house outside the town altogether. We brought a very large mass of evidence from Brussels and Paris, Edinburgh and Glasgow; and after a fight of five or six days in the House of Commons we succeeded in getting our bill against both the butchers and the slaughter-house proprietors and the local board of West Derby; but in the House of Lords we failed, although we had only one opponent there. I could not tell the reason why we failed.

2252. What is your position as to the composition for sanitary rates in lieu of those contained in the Act of 1854?—We have simplified the composition clauses in this way, that we now take the composition definitely upon one-half of the parochial assessment of property not exceeding 13*l.* net yearly rateable value. Formerly there was a provision that the owner might send in a claim to compound within a certain time after the rate was made, and there was a great deal of complication; but we have now simplified it, and the result financially is pretty much the same, there is no practical difference.

2253. How is the water supply of Liverpool regulated?—The water supply is regulated by a great many Acts of Parliament, the first being in the year 1847, which has been amended from time to time in 1850, 1852, 1855, 1860, 1862, and 1866. It is a gravitation scheme mainly, that is to say, a gravitation scheme as regards all the new works which the corporation has made. There were some pumping works in the town which we took from some old companies, which we have improved to a certain extent; but substantially it is a gravitation scheme. There are some special provisions in the Act of 1866 with regard to the prevention of waste by compelling the providing of cisterns, and also by supplying courts of houses by stand pipes instead of by pipes into each house, which we find very useful. I doubt very much whether it is prudent to put in a water supply under great pressure to small houses. It has led to two things; first, to a great waste of water, and secondly, to great dampness of the walls; and the consequence is that we are now putting stand pipes in courts, from which every inhabitant of the court can draw, instead of putting a pipe into each tenement.

2254. What is the annual expenditure and interest on capital?—At present we have a permanent rate of 6*d.* in the pound, and a poundage water rent also in the nature of a rate of 6¾*d.*; outside the borough that is 9¾*d.*, there being no 6*d.* rate outside the borough.

2255. Can you state the aggregate amount of expenditure of rates for local government purposes, together with the rateable value, and also how much a rate of 1*d.* in the pound in Liverpool amounts to?—

The following SUMMARY comprises this information in a tabular form.

No.	Name of Rate.	Rate in the £.			Total Amount of Rate in the Parish of Liverpool.			Total Amount of Rate realised throughout the Borough, the Poundage Rates being a little different in the out Townships forming part of the Borough.		
		1867.	1868.	1869.	1867.	1868.	1869 (Estimated).	1867.	1868.	1869 (Estimated).
	In the whole Borough:	*s. d.*	*s. d.*	*s. d.*	£	£	£	£	£	£
1	Library and museum -	0 1	0 1	0 1	7,062	7,360	7,519	10,327	10,570	10,832
2	Lighting - - -	0 2	0 2¼	0 2	9,854	10,810	10,646	14,074	15,401	15,208
3	Fire police - -	0 0½	0 0¼	0 0¼	3,285	2,702	2,661	4,691	3,850	3,816
4	Watch - - -	0 1 207/1000	0 1 158/1000	0 1 184/1000	8,524	8,522	8,527	12,341	12,240	12,284
5	Sanitary - - -									
	In the Parish of Liverpool:									
	Paving - - -	0 8½	0 8¾	0 6¾	44,816	47,462	36,174	86,230	81,075	62,425
	Sewer - - -	0 3½	0 6	0 3¾	18,457	32,536	17,417	38,072	56,286	36,445
	General - - -	0 7	0 7	0 6½	36,756	37,795	34,883	56,012	55,739	53,336
	In the whole Borough:									
6	The water rate - -	0 6	0 6	0 6	33,123	33,831	32,154	48,721	49,441	50,000
7	Domestic water rent -	0 6	0 6¾	0 6¾						
8	Improvement 1858 Act -	- -	- -	0 0½	- -	- -	2,680	- -	- -	3,878
	„ 1861 „ -									
	„ 1864 „ -	- -	0 1½	0 3½	- -	8,109	18,757	- -	11,550	27,141
	„ 1865 „ -	- -	- -	0 0¾	- -	- -	4,020	- -	- -	5,816
	„ 1865 „ Public parks, &c. }	- -	0 3¼	0 3¼	- -	17,559	17,417	- -	25,000	25,202
	„ 1867 „ -	- -	- -	0 0½	- -	- -	2,680	- -	- -	3,878
	Total - -	2 11½	3 8	3 7	61,877	206,686	195,485	270,469	321,152	310,262

A penny in the £ upon the whole assessable value of the property in the borough, allowing three-fourths of the assessments of land, railways, &c., will raise - - - - - - - - £7,755

Total amount of rates estimated to be raised in the year 1869 - - - - £310,262

2256. What has been done in the way of utilization of sewage at Liverpool?—A company has been formed, under the Liverpool Sewage Utilization Act, 1866, with a capital of half a million, to which the corporation have made a concession of the sewage of the borough for a term of 25 years, upon certain terms as to participating in the profits after a certain per-centage is paid upon the capital of the company, and the town council have also subscribed 5,000*l.* towards the capital of the company, as shareholders under the power contained, I think, in the General Act of 1867.

2257. What is the method by which they intend to carry out the utilization?—One section of the work is just complete now. They have taken possession of one sewer, and by pumping they propose to raise the sewage to one level, and then it is to be thrown over a sandy district at the mouth of the Mersey, about nine or ten miles from Liverpool, falling by gravitation after very little pumping at Liverpool. They have taken a farm of about 60 acres, on which they propose to experiment in the first instance, and I think that the first section of the works is about complete.

2258. Is the sewage running?—No, it is not actually running; but in a fortnight or three weeks it will be in operation. They have taken possession of the sewer from that district where privies have been converted into waterclosets.

2259. What is the death rate in Liverpool?—The death rate according to Dr. Trench's last return is 29·1 in the thousand.

2260. Are you aware of the death rate in Manchester?—From the same returns it was 32 last year.

2261. So that the Liverpool death rate is more favourable than Manchester?—At that time it was. I would not undertake to say that at the present moment it is so.

2262. Has this local government which you have described generally worked satisfactorily, do you think, or does it require amendment?—I think it has worked satisfactorily upon the whole.

2263. Twenty-nine is a high death rate; what should you say was the cause of the death rate in Liverpool being higher than the average?—Liverpool has a great many exceptional circumstances to contend with; owing to the very great mass of those court houses the density of population is considerable. I have compared the death rate and the density of population of all the large towns throughout England, and I have a very strong opinion that, as a rule, the death rate and the density of population run pretty much together, and that other causes do not countervail that; I think that is the paramount cause of high death rate. There is also one exceptionable circumstance connected with Liverpool in connexion with emigration of the lowest class of the labouring population who flock to Liverpool, and there is a great Irish population.

2264. I suppose that where the Irish live is about the densest part of the population?—Yes, it is the most dense part of the population.

2265. Is it to one particular part of Liverpool that your remark about the dense population applies?—No, to the whole borough taken altogether. You will remember that I mentioned that there is only one-fifth part of the whole area of the borough that is unbuilt upon.

2266. Do you think that what the local authorities ought to aim at is the spreading out of the population?—I think that the greatest good that can be done to old towns is by giving facilities for opening out the population and widening the streets, and requiring the owners of houses if possible to bring them into that state in which they would be built if they had to be built under the existing legislation. There are two evils to contend with; first of all, by the public streets being too narrow, or too short, or in the wrong direction, or by an insufficiency in the number of them. That is the first point, and the second is by insufficient open space being left for circulation of air around each house. Of course until lately there was

no law as to that subject, that is to say, until our byelaw.

2267. Do the artisans make much use of railroads to live outside the town?—Not very much at present.

2268. Is it an increasing habit?—In Liverpool it has not been tested, but I think that it will be very soon. There is a proposal, I believe, to build a large number of dwellings. The greatest facility and encouragement should be given in every possible way to carry out improvements. We go on very slowly indeed in Liverpool. I think that the corporation do perhaps as much as any other town in England, but still the process is very slow. I have some suggestions to offer upon that subject, both as to the principle and to the machinery by which it should be done, if the Commission think fit to hear them.

2269. Have you made much use of provisional orders under the 75th section of the Local Government Act?—Not in Liverpool at all, but I may mention that there is no objection to do it. I think that a preliminary local inquiry is useful in all cases of an application for a local Act. I think that it strengthens a good case, and it exposes the weakness of a bad one, which are both very beneficial things.

2270. Why have not you made use of the provisions of the 75th section?—In the first place, we have never adopted the 75th section of the Local Government Act, and there is a little doubt as to whether you can adopt a particular section, or whether, if you adopt a part of the Local Government Act, you are not bound to adopt the whole of the part that is under one heading. And then again, I may say we never had to go for street improvements without having to go for other matters as well, which we could not have got under a provisional order.

2271. Has there been any decision as to the power of adopting a part of the Local Government Act without adopting the whole heading?—There has been no decision, and until lately I did not doubt that we had the power to take a single section; that is to say, if you took a section which applies to the whole subject matter. I should not think you were justified in picking out a section and leaving other sections which dealt with the same subject. I may instance the 34th section of the Act of 1858, which enables us to make byelaws. I should never have doubted till lately, when the doubt was suggested to me, that we had power to take the 34th section, in order to make byelaws under it, without taking anything else. The Act is not quite divided, as the Lands Clauses Act is, into separate parts by distinct headings; it is only divided into separate parts by a sort of marginal heading.

2272. Have you any further suggestion to make as to the alteration of the law with regard to street lines?—I may say that I have a strong opinion that street improvements are very important sanitary works, more particularly in towns such as Liverpool and Manchester, and other large towns which were built, and in which the streets were laid out before there was any law upon the subject. At present the practice of Parliament is not quite uniform. Sometimes they cut down the promoters to the street line, and at other times they allow them to schedule a sufficient depth to get the benefit of the new frontages. That is advantageous in two ways. In the first place it enables you to recoup the cost to some extent, and in the second place it ensures new buildings along both lines of the new improved street, which is a very great advantage. You get all the old buildings demolished for a considerable depth in the line of the new street, and you compel them to be re-erected in accordance with your present regulations as to buildings. I remember the instance of Victoria Street, in Nottingham, where the owners could not agree with each other for a long time after the improvement was carried out, and there a gap was left in the street. The line having intersected the property, left a narrow strip belonging to one owner, not sufficient to be utilized for any purpose, and leaving the old buildings behind.

2273. Would you propose that the local authorities should be permitted to acquire property in cases of difference?—Yes, to a reasonable depth. It has been done this session in the Leeds case; it was refused to Bradford under one of the provisional orders. One of the provisional orders for Bradford was taken before a committee of the House of Commons, and the power was refused.

2274. Do you know what the practice of America is upon that point?—In the State of New York, I understand, they go to the other extreme, and that is inequitable. According to the law there, they levy the whole costs of the improvement upon the owners of property who, they say, are benefited, that is to say, upon the owners of property adjoining within a certain radius. I think that there is a certain proportion of the cost which should be levied in that way, and a certain proportion which should be paid by the municipality.

2275. Have you any suggestions to make as to the machinery?—Yes. The present machinery for carrying out these improvements is exceedingly expensive and unsatisfactory. The Lands Clauses Act, I think, was passed to meet the case of taking property compulsorily for some commercial profit, that is to say, taking it by railway companies and bodies of that sort; but I think it is too harsh in its application to the case of taking by municipalities for the benefit of the whole town, and who are punished most severely in a variety of ways; in fact so much so that it leads to disgust, and has a very discouraging effect upon improvements generally. The cost that we incur is something frightful. Under the three Acts which I have mentioned, 1864, 1865, and 1867, our costs up to the 31st of August last were 30,863*l.*

2276. You think that a distinction should be made as to cases of necessary improvements?—I think so. I think that a more equitable mode should be adopted, for instance, we had a case the other day of the taking of a public-house required for the widening of a street. The house belonged to the corporation in the year 1859; it was then a grocer's shop, it was leased, and the lease was renewed to the owner; he bought a licence and transferred it to this place; we have now had to take it, and we have had to compensate him in the first instance, then we compensate the lessee, then we compensate the tenant, and then we compensate the brewer who has got a tie upon the house, and they all took care not to go to the same tribunal, because if we could get the whole of them to one tribunal we should have to pay only the fee simple value in actual possession of the property altogether; but by getting separate tribunals the sum of the parts becomes much greater than the whole, that is to say, the compensation altogether is very much greater than the value of the fee simple in possession. Then, in taking a strip off 20 shops in a street, for widening the street, in cases of that sort, in taking part of them, or the whole of them, as the case may be, we find that every man goes to a separate tribunal; the first man takes an arbitration, the second will take a jury, the third will take a separate arbitration, the fourth a jury, and so on all through; and then the lessees and the occupiers do the same. I was noticing the widening of Church Street, in taking six shops, we had eight separate inquiries, and the cost of the tribunals, and the cost of the inquiries altogether were something frightful.

2277. What is the tribunal to which you would have all such cases referred?—I think that there should be a tribunal named in the Act or the provisional order; I should prefer a provisional order to an Act of Parliament, because I should have the advantage of a local inquiry, and every individual would have an opportunity of being heard; and I should provide by the Act of Parliament or provisional order that the improvements should be divided into sections, and I should ask each owner and lessee, in addition to his assent or dissent, to name an arbitrator, and then I should let the committee on the bill, or the Home Secretary, take an arbitrator from the

returns made for the whole of the owners or lessees, and take another arbitrator named by the promoters, and let a third be named by the Board of Trade, and let them go into the whole thing at once and make an award of what shall be the sum to be paid to the respective parties; that would be much more satisfactory than the present plan, because they would have time to investigate every case, and apply the illustrations of value to the whole. At present in the case of juries, it is quite a lottery, in fact, because you have not time in one day to go into all the illustrations of value that are given, and test them, in the way that the arbitrators would do if they had the question of the whole street to deal with at once.

2278. Why do you go to the Board of Trade?—At present the Board of Trade have a staff of umpires, and they have power, under the Railways Act, to appoint one in case the parties differ.

2279. Do the local Acts in Liverpool and the byelaws in Bradford give sufficient power to the local authorities as to new streets?—I think that subject to the objection which I have to mention to byelaws, altogether, with regard to property, the local Acts and the byelaws give sufficient power to the local authorities without the payment of compensation, but I think that some supplementary law is wanted coupled with compensation.

2280. Would you propose, for instance, that in laying out the lines of new streets the local authorities should have power to enforce their own plans, subject to compensation to the owners?—Yes, in this way. I should first of all not allow the local authority to depart from the landowner's plan, except in requiring a certain width of street and level of street, and so on, as they do now, but supplemental to that I should give them power, upon suitable compensation, to be assessed, to require the direction, width, and extent of the street to be altered. The measure of compensation would be shortly this. First of all, the value of any additional land which was thrown into the street, because a street 30 feet wide might be sufficient for the owner's purpose, but the local board may say we want one 50 feet, because by-and-by it may become a main thoroughfare, so that the first compensation that they must pay him is for the additional land that he has to sacrifice. Then they must pay him also, upon the assessment of the value of two properties, first, laid out according to his plan, and then according to their own, and the loss, if any, which he would sustain by selling according to their plan and not according to his own; I would not interfere in any way with the setting out of the lots.

2281. Might not the plan of the local authority be such an improvement upon the owner's plan as to give them a claim to compensation the other way?—No, I think not, generally. The interest of the owner would often be to throw his neighbour into the background, and keep him there as long as he could. That is a right that he has got from the ownership of his estate, and if you facilitate the opening of the adjoining owner's estate you must pay him a money compensation for the damage which he would sustain. I know that, in rapidly increasing villages in Yorkshire, it sometimes happens that the interest of the owner is to keep his neighbour's land out of the market as long as he can, and to turn the backs of his houses upon him and prevent him getting through if he has got a main line of road. I think also that turnpike roads should be taken out of the exception. At present there is an exception of turnpike roads, which in my experience has led to evil, in this way, that turnpike roads and gates tend to cramp, and limit the building area. I think that the time has arrived for taking turnpike roads out of the exception which the Act contains.

2282. Do you think that the time has arrived generally for an Act to be passed, making such regulations as you suggest for streets and houses, to apply to all places, and to override local Acts?—I can scarcely say to override local Acts, but I think that the time has arrived when it would be very easy to frame a sanitary law applicable to the whole kingdom, to be supplemented in towns by provisional orders, or by byelaws with reference to such matters as come within the province of byelaws.

2283. Should such a general law apply to such large places as Liverpool and Manchester?—I think that large towns must always have supplemental legislation, either by provisional orders or by local Acts.

2284. What sort of sized towns do you mean?—I think there might be a public Act of Parliament applicable to the whole country, which would satisfy all the requirements of towns up to probably 10,000 inhabitants, or nearly that number.

2285. What suggestion have you to make as to byelaws?—I agree substantially with the town clerk of Halifax and the town clerk of Ipswich, but for rather different reasons. I consider that byelaws should be limited to such matters as slaughter-houses, hackney carriages, lodging houses, and matters of that sort. I object, on principle, to byelaws to regulate buildings or streets, because I think that should be the subject of positive enactment, and I do not see any difficulty about it. I think that there might be a little concession made in some cases, as there was at Bradford, with regard to land laid out, or covenanted to be laid out, before the proposed general Act came into operation, but beyond that, I am sure that people would submit much more readily to a specific law than to byelaws, which can be waived, amended, or altered at the discretion of the local boards. I should make all regulations as to streets and buildings the subject of enactment, and, as far as possible, without any discretion, or with discretion within very narrow limits.

2286. You think that there still would be a margin as regards discretion with the best general code of byelaws inserted in a statute?—I would not have it so if I could help it.

2287. Do not you think that it would be necessary to leave a certain margin for byelaws in the locality?—It might be done in this way, you would say with reference to land which has been laid out or covenanted to be laid out by the owner before the Act came into operation, that the local sanitary authority might make a certain concession, with the sanction of the Home Secretary, or some matter of that sort, but beyond this there is very great difficulty about byelaws. I have never seen a set yet which would stand the test of a court, nor have I seen a set which I would have approved, irrespective of their standing the test of any court of law; I believe that whenever they have been taken to the Court of Queen's Bench they have always been held bad, for this reason, that the courts have tried them by the test applicable to byelaws irrespective of statutory authority; they must be reasonable, they must be certain, they must be definite, and they must be without arbitrary discretion. When the court comes to look at them and test them by those rules, they invariably find them bad. I have never known one yet which has not been held bad.

2288. Therefore, generally speaking, you would wish byelaws to be made more part of the statute law and definite?—Yes.

2289. You make the exception which you have just made as to lodging houses, slaughter-houses, hackney carriages, and certain matters of that kind; those are matters which are very easily dealt with by byelaws?—You may easily make a legal byelaw, and from time to time find it necessary to make little alterations and concessions.

2290. Which do you think the best central authority to preside over all the local governments in the kingdom?—The best central authority is the Home Secretary, or a minister of health having a seat in Parliament. With regard to the local authority I have several suggestions to make.

2291. What suggestions have you to make?—With regard to the local authority, I should disturb matters as little as possible; one principle, I think, must be adhered to, and that is, that roads and sewers, and all sanitary matters except the Diseases Prevention Act, must go together. What I should propose would be

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this—beginning with the basis of a general Act applicable to the whole country, and to be supplemented only when necessary in towns, I should make the highway surveyors or the highway board the local authority, not the highway surveyors as now appointed, but a board, (call it the local sanitary board, or the local sanitary authority perhaps would be better,) varying in number with the population. For instance, if you got a population of 3,000, probably five would be sufficient, or, if you got a population of 5,000, seven would be sufficient. Then I would make all the county justices who were eligible for election to the board *ex officio* members of that board, if they chose to act, that is to say, if they would accept the duty.

2292. For what sort of area would you propose this authority?—I would not disturb the existing areas; taking country districts, I would take every place that maintains its own highways, subject to the Home Secretary's power to divide and consolidate.

2293. Your last answer does not apply to towns?—In towns you have already got one of three things; you have either got a municipal authority, a board of improvement commissioners, or a local board of health.

2294. As far as large towns, like Liverpool, Manchester, Birmingham, and so on, are concerned, do you think that there is any alteration required in the local authority?—No, I think not; we find that the parochial authority for the Diseases Prevention Act where it is put in force, and the municipal authority for all other matters connected with health, work exceedingly well.

2295. Is there any alteration necessary in the relation between the local authority, in a town like Liverpool, and the central authority?—We have no objection whatever to the 49th section of the Sanitary Act of 1866, which gives the Home Secretary power to send down an inspector to report, and also to take action, if the local authority fails in its duty; but we should certainly object, and I think the country would generally object, either to a board of inspectors for the country, or to inspectors who would be constantly making inquiries, or investigating without any complaints or without an excessive death rate.

2296. You think that the alterations required by law chiefly relate to country districts?—I think so.

2297. You have had some experience, have you not, as to the local government of country districts?—Yes, up to 1866 I had more experience in country districts than in towns.

2298. And there you think local government defective?—I think, for instance, the board of guardians as the nuisance authority is quite ineffective; it is a mixture of incongruous duties. The board of guardians have to attend to the relief of the poor, whereas the highway surveyors have already got, under the Highway Act of 1835, certain powers connected with drains, and also with reference to nuisances. They have also got appliances, plant, and servants to do all works connected with matters of that sort.

2299. Would you in any case give power to the vestry to make works relating to one particular parish?—The vestry is rather a difficult term to apply. The whole of England is divided into districts for highway purposes; in some places it is a parish, in other places it is a township, and in most places in the north of England it is only a hamlet; that is, a part of a township, and I shall take those districts just as they stand, giving the county justices in petty sessions jurisdiction over those places of less than 5,000 inhabitants, and I would allow them to a certain extent, as they have under the Highway Act, power to inflict penalties to a certain extent, and also, if necessary, to approve of complaints to the Home Secretary, who would send down an inspector under the 49th section of the Act of 1866; the Home Secretary should also have ample powers to sub-divide, consolidate, and rearrange districts from time to time.

2300. Supposing there was an intermediate authority established between the central office in London and the local boards throughout the kingdom, such as has been suggested in the proposed county financial boards, which would be a department of the quarter sessions, do you think that such an intermediate body could have any relations whatever with a town like Liverpool?—I do not, and I do not think it necessary in country districts.

2301. At all events large towns could not be dealt with by such a body?—I do not think they would submit to it.

2302. What is your opinion as to the constitution of the conservancy boards of rivers?—I think that you must now have a conservancy board either with reference to the whole watershed of each large river, or, taking the West Riding, as an example, cutting it up into about three separate conservancy boards. You might take the Aire and Calder for one probably, the Wharfe for another, and the Ouse for a third, the Ouse Conservancy Board taking the whole, when you get to the confluence of the others, and when it becomes the Ouse altogether, and I think that that conservancy board should be limited to three objects, and not interfere with sewerage. I think, first of all, they should prevent flooding and store up waters by impounding reservoirs near heads of valleys where the water is perfectly pure. I think that is a most desirable thing, and that only a conservancy board for the whole watershed could accomplish that. They should also preserve the bed of the streams free from obstruction, and the water from pollution; and thirdly, they might provide water power to mills, and water supply to local authorities, and levy rates upon works and places along the valleys which they supply with power or water. I think that a board of that sort would be exceedingly valuable.

2303. Do I understand you to think that the same conservancy board could deal with all those subjects?—Yes, with those three subjects, but not to interfere with sanitary matters, except in those respects.

2304. Would you let them interfere also with the arterial drainage of a valley?—I do not think the Conservancy Board should interfere with that. All they should take care of would be that nobody should put anything in except what was pure water.

2305. Why should not the same board take care of the rivers in all respects, both preserving them from pollution, and draining pure water into them?—They would take care that the river was not polluted. That would be one of their duties, but I do not think that such a board could undertake to get rid of the sewerage of large towns. That must be dealt with by the local sanitary authorities, or by unions of local authorities.

2306. Do you see any objection to this Conservancy Board dealing with all questions relating to rivers, both keeping pollution from them, and draining pure water into them from the country round?—I think that they should not interfere with arterial drainage further than preventing anything going in that was not pure. I think that the sewerage can only be dealt with in one of two ways, that is to say, by the separate local authorities or by an union of the local authorities, which are respectively interested under certain circumstances.

2307. Do you think that those conservancy boards should generally be a combination of local authorities?—I think not.

2308. If the parishes or districts which have local authorities happened to coincide in boundaries with the watershed of rivers, it would be so far an advantage, would it not?—I should scarcely like to take the Conservancy Board from the local authorities, because their main duty would be to watch the local authorities, and take care that they did not infringe upon the rights of rivers. I think that the county magistrates in the watershed, that is the county magistrates being the owners of property in each watershed, would make an excellent conservancy board, or, if too numerous, those who have been in

the commission of the peace a certain number of years.

2309. What suggestion have you to make as to finances, particularly as to a sinking fund provision?—First of all, with regard to a sinking fund, the view which I take is this, that with regard to gravitation waterworks there should be no sinking fund at all, but there should, as we have in the Liverpool Acts, be a depreciation fund, that is to say, a sort of contingency fund to provide against any serious accident which might make a great inroad upon one year's income. With regard to improvement schemes, that is, street improvements, I should think 50 years; with regard to main sewerage works, 50 years, or the purchase of land for utilization purposes; and with regard to paving, I think 20 years would be sufficient. There is, at present, great complication about these matters. I may explain, that the Liverpool Acts, the first Sanitary Acts, have got the clause worded in the right way; the clause is that the thirtieth part of the debt from time to time existing should be invested in a sinking fund, and the council may from time to time apply the sinking fund in paying off the borrowed monies, and sell out consols and apply them. Unfortunately in the Improvement Act of 1858 one of the clauses was altered altogether, and it says that the council shall lay by such a sum as will in 50 years, accumulated at compound interest, pay off the debt. That has landed us in this difficulty, the clause as to realising a sinking fund and paying off the debt remaining as in the old Act: our reserve has now got to about 200,000*l.* in the sinking fund, and I wish very much to apply it in reduction of the debt, because we are paying 4¼ per cent. for money and only getting 3 per cent. Of course the borough treasurer would say "No, that would spoil the pro-"blem altogether;" because he has made the calculation that laying by a sinking fund of 18*s.* per cent. will in 50 years pay off the whole debt if you allow it to accumulate at compound interest, but if you disturb it by applying the clause in the Act of 1858, selling out consols and paying off the debt, unless you pay in also the dividends which the fund sold out would have produced from time to time, it would not work out in that way.

2310. What suggestion have you to make as to the stamp duties?—Under the Public Health Act everything is exempt from duty, and the consequence is there is a very serious tax upon the exercise of powers under local Acts, which those who exercise the powers of the Local Government Acts do not feel. I may mention as a striking instance of that, the Wallasey local board, who bought a ferry for 70,000*l.* They took a conveyance, and gave their bonds without stamps, whereas if we had bought the ferry instead of them, our stamp duty would have been 350*l.* upon the transaction.

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2311. What would you suggest with reference to that point?—That all matters of that sort should be free from duty altogether. Our stamp duties under the last three Improvement Acts will amount to 7,350*l.*

2312. Do you think that by the simplification and consolidation, both of the law and the authorities, economy would arise in the local government?—Yes, I think so.

2313. Do you think that local government is wasted by the multiplication, both of laws and authorities?—Yes, it is got into such a state of confusion that nobody can make head or tail of it.

2314. Is there any complaint in Liverpool as to the increase of rates for local government?—I think not. There has been a little complaint in consequence of our expenditure for conversions of privies into water-closets, but I think it has died away.

2315. (*Mr. Shaw.*) I believe you have adopted the principle of mortuaries in Liverpool?—I am sorry to say that we have not done anything. There was one commenced by Mr. Robert Hutchison, for the Roman Catholics; he began to build a very beautiful mortuary chapel, but at the time of his bankruptcy it was only half finished, and so it has remained. The subject has been discussed, but nothing has been done.

2316. (*Mr. Powell.*) You stated in a former part of your evidence, as I understood you, that there was only one point of discharge of the sewers into the river or the sea; is that really the case?—If I did say so, it was a mistake, the sewers or one of the principal sewers which did discharge in the centre of the town is now altered.

2317. Are all of them intended to be permanent, or is one of them to be caught by an intercepting drain?—I believe they are intended to be intercepted and taken for sewage by the Utilization Company, who have got a concession of the whole of the sewage of the borough.

2318. (*Mr. Bircham.*) Are you carrying out the utilization of sewage yourselves, or are you dealing with some outside company?—We are dealing with a company, but we have as a corporation subscribed 5,000*l.* under the powers in the Public Health Act, 1867.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 7th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.	JOHN TOMLINSON HIBBERT, Esq., M.P.
The EARL of DUCIE.	EVAN MATTHEW RICHARDS, Esq., M.P.
The Right Hon. LORD ROBERT MONTAGU, M.P.	FRANCIS SHARP POWELL, Esq.
The Right Hon. STEPHEN CAVE, M.P.	BENJAMIN SHAW, Esq.
Sir THOMAS WATSON, Bart., M.D., F.R.S.	JAMES PAGET, Esq., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.	HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN ROBINSON MCCLEAN, Esq., M.P.	JOHN LAMBERT, Esq.
SAMUEL WHITBREAD, Esq., M.P.	FRANCIS THOMAS BIRCHAM, Esq.

(13.) JOSEPH HERON, Esq., examined.

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2319. (*Chairman.*) You are town clerk of Manchester, are you not?—I am.

2320. Will you state the condition of the city of Manchester as to existing local sanitary authorities?—The city of Manchester comprises five townships, and a small extra-parochial district called Beswick. The population of the city of Manchester is from 360,000 to 380,000, and the only authority within the city of Manchester for carrying out all powers relating to general, sanitary, or other matters is now the council of the city. We have only within the city exercising their own functions the guardians of the

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townships, and with the exception of the guardians, all powers of every description are vested in and carried out by the town council.

2321. I suppose sanitary matters are carried out by the town council?—Yes, wholly.

2322. The guardians have no power in those matters?—I will not say that they have no power, because there are certain powers in some nuisance Acts given to the guardians to interfere, and no doubt it may be assumed that, as the result of this inquiry, all that possible collision of authority will be done away with; but practically I may say that in Manchester I scarcely know an instance in which in any such matters the guardians have found it necessary in any way to interfere.

2323. Then there might be a conflict of authority, but practically that has not occurred?—No doubt there might, and I do not think there can be any doubt that the possibility of such conflict ought by an improved legislation to be avoided.

2324. What was the date of the incorporation of Manchester?—The date of the incorporation was the latter end of the year 1838, and I am sorry to say that since that period I have acted as town clerk of the city of Manchester.

2325. What are the local Acts which are in force in Manchester?—The local Acts in force I may state are very numerous. We have in fact at the present moment about 22 local Acts which are in force within the city. Our first Act of Parliament was passed, I think, in 1843, but it was an Act passed for the purpose of vesting in the city council the powers and the property including the gasworks, which at that time belonged to the commissioners of police acting under a local Act for the township of Manchester. We had local police Acts in two or three of the other townships, but the powers of such Acts were very shortly after or about the same time, under the powers of the Municipal Act, transferred to the corporation; but in consideration of there being a large amount of property vested in the commissioners of police for the township of Manchester, it was thought desirable to get an Act of Parliament to vest this property in the corporation. The next Act, which was a very long and very important Act, in fact one of the first Acts in relation to general police and sanitary matters which was passed, was passed in the year 1844, a copy of which I now hold in my hand (*producing the same*). That, as the Commission will see, is very lengthy and very comprehensive, and I believe with certain additions which have been made since, and of which we have from time to time availed ourselves, has worked very satisfactorily. That was in 1844. The Public Health Act, which was passed in 1848, was I may say from personal knowledge based very much upon this Act of Parliament, because at that time I as representative of Manchester, as well as the representatives of other corporations, attended in London to state the objections which we entertained to the bill as it was originally introduced into the House at that time by Lord Morpeth, and as a consequence of what took place at that interview, I, with Mr. Brotherton the member for Salford and Mr. Beckett the member for Leeds, attended at Lord Morpeth's request for three days from four to five hours each day going through the original Public Health Bill with the draughtsmen, and I may say that in most cases Lord Morpeth was satisfied that the alterations which we suggested were desirable to be made, and to a very large extent the original Public Health Act, was based upon this local Act which we obtained. At the same time (1844) we obtained also for Manchester an Improvement Act; at that time of course the Lands Clauses Consolidation Act had not been passed (the Lands Clauses Consolidation Act was passed in 1845), but in our Improvement Act of Parliament, lands clauses were introduced, and under those lands clauses we worked for upwards of 20 years; but at last under a sort of gentle compulsion we were required by Lord Redesdale to adopt the General Lands Clauses Act, and to give up our peculiar Lands Clauses Act under which we had been carrying out all our improvements for many years; and in some respects we have suffered very materially from the change, because one of the objections which was stated by the town clerk of Liverpool, and which is a very formidable objection, and which increased enormously the expense of carrying out compulsory works of any kind under the Lands Clauses Act, did not arise under our own lands clauses. It will be recollected that the town clerk of Liverpool referred to the fact which often happens, that in addition to the owner there might be two or three lessees and other parties who are interested in the property, and that under the present Lands Clauses Act each of those parties having an interest can require to be independently heard and considered by in fact a distinct tribunal, so that as it was explained, very often the corporation would find or the local authorities would find that they would pay, by having to pay for parts separately ascertained, a great deal more than any tribunal would ever determine to be the value of the whole. Under our own lands clauses that was not the case. Under those clauses the duty of the jury (for we could go to a jury then, we were not obliged to go to an arbitration at the request of either of the parties which we are under the Lands Clauses Consolidation Act), or of the arbitrator, whichever was preferred, was to ascertain the value of the fee simple, and then having ascertained the value of the property to divide it amongst the different claimants, so that the first inquiry was that in which the local authority was mainly, if not entirely, interested, and afterwards it became a struggle between those who had to divide the plunder in what shares or proportions they were to obtain it, which of course lessened very much the expense.

2326. Did the Lands Clauses Consolidation Act of 1845 make provisions similar to those in your improvement Act of 1844?—Generally, with the distinction which I have just been explaining. I may state that one cause of the enormous expense, I am happy to say, is now got rid of. Under the present law, there is no power of taxing the costs of an arbitration except in the most unsatisfactory manner possible, which in fact amounts to no taxation at all. The costs have to be ascertained by the umpire who may be acting as between the two parties; the umpire is very often a surveyor, or certainly a person who has no knowledge to enable him to do that duty satisfactorily, and very often he is influenced by other considerations which would prevent his dealing with the costs as an officer of the court. I have been for several years trying to get that altered and I am happy to say that this year we have a short bill in Parliament which I prepared and which was introduced by Mr. Bazley with the representatives on the back of the bill also of Liverpool, Birmingham, and other large towns, and by that bill, which is now waiting for the royal assent, we shall have power to tax through the officers of the court the costs of arbitration in the same way as they have always been authorized to tax the costs of an inquiry by means of a jury, and there is no doubt at all that that will very largely reduce the cost of such inquiries.

2327. (*Earl of Romney.*) Is that a public Act?—Yes, it is a public Act, it is now in fact taken up by the Government. Two years ago a clause was obtained in a railway bill to the same effect, but that only applied to inquiries affecting railways, and you will see that by a clause in the bill to which I have referred, and which is now in your Lordships' House, that clause in the railway Act is very properly repealed, because the effect of that bill will be to amend the Lands Clauses Act, which will apply to all parties, railways, corporations, local authorities, and everybody else.

2328. (*Chairman.*) Was that a bill which was introduced by Mr. Hibbert?—No, by Mr. Bazley. Mr. Hibbert's name is on the bill and also that of Mr. Greaves the member for Liverpool, and I think also the member for Birmingham.

2329. (*Mr. Powell.*) It was not a private Act, I believe?—No, it is a public bill; it is an amendment of the Lands Clauses Act, but it repeals, and very properly, a previous amendment and alteration of that Act which had been obtained in a railway bill, only applying to inquiries relating to railways, so that by that bill the general law will be altered, and there is no doubt the effect will be not only enormously to reduce the costs which will be sent in, knowing that there is that power of taxation, but also it will give to the local authorities the power of having them fairly ascertained, and by a competent tribunal.

2330. (*Chairman.*) Does the Manchester Police Regulation Act which you have placed in my hands refer to the borough of Manchester as coincident with the present city of Manchester?—Yes.

2331. What parts of the Public Health Act of 1848 do you say were copied from this Manchester Act of 1844?—Nearly all the clauses.

2332. Do you mean clauses as to power, or as to authorities also?—As to powers only. Of course there was this distinction in the Act of 1848, there was the creation of the board of health, and if it were at all necessary I could show to this Commission the very strong objections which were urged both by Manchester and all other corporations to the very extravagant powers of interference that were originally proposed in the Public Health Bill; but they were to a very large extent got rid of as the result of what I have just stated, but still there were left many clauses that we thought very objectionable, but as they did not materially interfere with us we did not think it necessary to make any strenuous opposition. But those powers I am satisfied led ultimately to the determination on the part of the Government to abolish the general board of health.

2333. Have you any of the other 22 local Acts which you say are still alive in Manchester?—I hand in the Act passed in the year 1845, which has more special reference to sanitary improvements, and in that Act, amongst other clauses, we obtained powers which we had already found, even at that early stage, were desirable by going through a certain process which is prescribed in the Act to take property for sanitary improvements compulsorily, by obtaining the consent of the Secretary of State I do not think that such provisions have been introduced into any other Acts, but I may say that we have never acted upon them. We have found, although at that time we thought they might be useful, that there have been difficulties in the way, and if we did want to obtain powers for improvements of any kind we have included them in our Improvement Acts, and obtained power from Parliament in the usual way. The objection to those clauses is this, that if we had interfered for the purpose of taking property compulsorily for sanitary improvements, we must have paid extravagant compensation, which, as a matter of course, all owners of property obtain from any public body, whether it is a corporation, a local authority, or a railway company, and we should have had to pay those extravagant compensations when we were taking properties which really we had only to interfere with because they were unfit for human habitation to a very large extent. Under the Act which has been recently passed, that is to say, the Artisans and Labourers' Dwellings Act, which I believe will be found practically very useful, and which we are bringing into operation in Manchester to a very large extent, that principle is got rid of. The principle of that Act is this, that the responsibility of making the property fit for human habitation really rests with the proprietor, and that unless his property is in that condition he has no right to be obtaining rent, and that principle is carried out; so that if the local authority has to purchase the property he does not purchase it in the ordinary way, but he purchases it as property actually condemned in consequence of the unsatisfactory condition in which it is found, and that will reduce to a very large extent the amount which under those circumstances would have to be paid by the local authority. I think that that is a perfectly just principle. In addition, the local authority have this power, which in many cases would probably be all that it would be necessary to exercise—they have the power to close absolutely premises as habitations until the owner has made such alterations as in their opinion are absolutely necessary to fit them for residence. As regards other Acts they are very numerous, but I do not think that it is at all necessary to occupy your time by referring specially to them; they relate to all manner of subjects. We have no less than six Acts of Parliament that have been passed relating simply to the waterworks of the corporation. Then we have a variety of Improvement Acts; we have a Burial Board Act. We have also what are called Waterworks and Improvements Acts, in which there are clauses relating not only to the waterworks but also to various other matters, as well as every kind of improvement, and general powers to take property by compulsion. We have also an Act which we obtained for the erection of a new town hall, which was obtained in 1866, and that also contains many other provisions of a general character But I can hand in, if the Commission wish, a copy of the answers that we have given recently to the Rivers Commission. There is much information in such replies, and at the end there is a schedule of all Acts of Parliament in force within the city (*delivering in the same*).

2334. Of those 22 Acts are there any repealing each other?—Not very many repealing; but there are a great number giving additional powers which have from time to time been found to be desirable and necessary.

2335. Have you ever attempted to codify them all?—No, we have not; it would be a work of very great labour. There is no doubt that it would be a considerable advantage to the inhabitants if they were consolidated. I may say that I have been glad that it has not been imposed upon us by Lord Redesdale, because it would be a very great labour, and there would be great danger of our sacrificing some clauses which might be very useful. But I may say with reference even to the Waterworks Clauses Act by way of illustration, that in many of our Acts we have from time to time, as the result of actual experience, found it necessary to get additional provisions, for the purpose of preventing the waste and the stealing and otherwise illegally dealing with our water; and I have no doubt that whenever the general public Waterworks Clauses Act comes to be considered, many clauses that we have introduced into our Acts will be found very desirable to be embodied in any general law.

2336. Has codification been suggested or talked of?—No, it has never been suggested.

2337. May it not be the fact that such a mass of Acts may render people liable to penalties without their being aware of it?—As far as regards the waterworks, for instance, we publish the clauses, showing what penalties parties are liable to in connexion with the waterworks. Then as regards the other provisions, there is no publication of that kind; but they are generally of such a character that parties have not much difficulty in finding out what the law is. I find that they always seem to be very well aware of what the Acts of Parliament authorize us to do, and if by any possibility they can upon a technical or other ground evade our clauses, they are very astute in discovering the means of doing so.

2338. To what extent besides all this mass of local Acts do the public Acts apply to Manchester?—They do not apply at all. We have never in any way—except in one instance in which we introduced some particular clause, I forget which at this moment—adopted any clauses of the public Acts, really because to a very large extent we have found ourselves always in possession of either the same or clauses having similar objects.

2339. Would that apply to the Nuisance Removal Acts?—To a very large extent it would, but we do

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now in some instances, wherever we find that those provisions are in any way superior, carry out the provisions of the Public Acts. For instance, I may say with regard to smoke, we have recently adopted the provision of the Sanitary Act of 1866, section 19, because we find it superior to our own; and perhaps I may as well just call the attention of the Commission to what that clause has really decided. It is not always interpreted or read in the same way, but I have no doubt that the reading which we have put upon it, and it has been so decided repeatedly by the magistrates, is the correct one. By that Act the word "nuisance" is declared to mean absolutely, unequivocally, and without any mode of escape, "any "chimney" (not being the chimney of a private dwelling house) "sending forth black smoke in such "quantity as to be a nuisance." Accordingly every chimney, no matter with what works it may be connected, is by that clause declared under such circumstances to be a nuisance; and we are going continually before the magistrates under that clause, instead of under our own, where the words "as far as practicable" were introduced; all we have to prove and all we do prove is the issuing of black smoke, and I am happy to say that the magistrates generally consider that a comparatively small amount of black smoke is a nuisance and is within the clause, and the magistrates have simply to make their order for the abatement of the nuisance within the period they choose to prescribe, and at the end of that time if the nuisance is again found to exist we go before the magistrates, and they have no duty whatever but to impose the penalty, and there is no question that can arise under that clause as to how far it is practicable, because Parliament has considered that the time had arrived when those words need not be included. The proviso is a little ambiguous, but the proviso it will be found by carefully reading the clause only applies to the furnaces which do not consume the smoke arising from them. That is to say, absolutely and entirely, and it applies to those furnaces which are referred to in the third paragraph—"Any fireplace or "furnace which does not as far as practicable con- "sume the smoke arising from the combustible used "in such fireplace or furnace, and is used within "the district of a nuisance authority for work- "ing engines by steam or in any mill factory," &c. The proviso applies to this paragraph, and in those cases, if the magistrates are satisfied that the owner has done all that is practicable for the purpose of consuming his smoke absolutely and entirely, they can refuse to convict, but as far as regards the black smoke which is declared to be a nuisance that proviso does not at all apply. I may be permitted to add that in my opinion it is very desirable that power should be given to the justices to impose a fine upon the fireman or stoker, as in very many cases the nuisance of smoke entirely arises from the careless and culpable manner in which he performs his duties. The want of this power has often been referred to by the stipendiary magistrate of Manchester.

2340. Have you any remark to make as to the 49th section of the Act of 1866, the section providing for appeal to the Secretary of State where the sewer authority is in fault?—I happen to know perhaps better than anybody else under what circumstances that clause was introduced. In the bill as originally introduced, and also as it passed through the select committee, there were certain clauses introduced, the 14th, 15th, 16th, 17th, and 27th clauses of the bill, by which power was given under certain circumstances to complain to the magistrates that the local authority were not doing their duty in certain cases; but I had better read what those cases were. The 14th section as it originally appeared says, "Where complaint is made to any justice of the "peace that a sewer authority has made default in "providing its district with sufficient sewers, or in "the maintenance of the existing sewers, or in pro- "viding its district with a supply of water in cases "where danger arises to the health of the inhabitants "from the insufficiency or unwholesomeness of the "existing supply, and a proper supply can be obtained "at a reasonable cost, the justice shall issue a sum- "mons to the sewer authority;" and then it goes on to provide in the subsequent clauses what the magistrates might do. They might make an order requiring the local authority to carry out works, and a variety of other things. To these clauses, both as they appeared in the bill in the first instance, and also when it came from the select committee, the corporation of Manchester, and I believe others, objected on this ground. We said that it would be degrading to a very great extent local self-government, and that it would not be possible to get such individuals as would be desirable to act as members of the council if they were liable to be called to account before the local magistrates. When the bill was in committee in the House, and very near the end of the session, finding that those clauses were still in the bill I came up to town, and I am glad to say that I did succeed ultimately in inducing the Secretary of State, having charge of the bill, Mr. Bruce, to consent to omit the clauses to which we objected, and to insert a clause which I, with Mr. Thring, under the gallery of the House prepared. I stated at that time and I still believe that there is no provision of more importance that has ever been inserted in any Sanitary Act. The judicious exercise of the power given to the Secretary of State will often be found most useful in assisting corporations, where they are anxious to do their duty, and also as I believe effective in compelling by the force of public opinion local authorities not so disposed to carry out effectively the powers with which they are invested for public and sanitary objects.

2341. In fact you induced the Government to change the appeal from the justices to the Secretary of State?—Yes, and with this addition: That the power is given in all cases where a local authority makes default in enforcing the provisions of the Nuisance Removal Act, so giving to the Secretary of State complete power to interfere in all cases where he, upon inquiry, might think it was necessary.

2342. It seems to be the opinion of the people of Manchester that they should be dealt with rather as a great metropolitan city, too large to be taken into the provisions of general Acts?—Generally I think it is quite impossible to do away with local legislation.

2343. You think that in any general consolidation of the sanitary laws of the kingdom it would be impossible to take in such large cities as Manchester?—Quite impossible, I think, although I believe that the greatest possible advantage would result from a codification and simplification of all the public Acts dealing with those questions which are interesting to or affecting local authorities, whether large or small.

2344. But still if such a consolidation is carried out you think that large cities like Manchester must have a code of their own?—They must have power to apply to Parliament from time to time as might be necessary, but I believe that the result might be if a codification were made that we may very likely get rid in subsequent legislation of a certain portion of our local legislation, and adopt that which had been determined for the whole country where the clauses were found to be similar, and I have no doubt that they would be quite as satisfactory, if not more so.

2345. Is it your opinion that if a general consolidation of the public sanitary laws of the kingdom was made, a certain part of your local legislation might merge in it?—I have no doubt of it; and although I think it would be undesirable to do that compulsorily, I have no doubt that when that consolidation had taken place it would lead to considerable modification in our local Acts. The authorities that have to deal with the local legislation in both Houses exercise a great amount of care in these matters. I may say that nothing can be more satisfactory in my opinion than the way in which local Acts of Parliament are dealt with, especially in the House of Lords by the present chairman of com-

mittees, who is extremely cautious as to what clauses he will allow you to introduce; and when you cannot show that there has been a clause similar in some public Act, he will put you under the necessity of proving most strongly the necessity for and the grounds upon which you propose any special legislation. I have no doubt that when that simplification and codification of the general law had taken place by that sort of compulsion, local legislation to a very large extent would be simplified, and that the local authorities would be required, probably Manchester as well as Liverpool, to consider to what extent their special local Acts could be repealed without any injury or interference with the necessary powers.

2346. Have you considered to what extent you think the local legislation of Manchester might be reduced by such a merging of those general provisions in a general Act?—I think it would be reduced enormously. For instance, the very Acts that I have handed in to the Commission I think to a very large extent would be found to be no longer necessary.

2347. Would you say that, supposing the general Act was carried out very completely, there might be nothing left for Manchester but what you might call byelaws?—I do not think, unless the power to make byelaws was very largely extended beyond what exists at the present time, that it would do away with the necessity of from time to time coming for local Acts. A great many provisions are found to be necessary that we could not at all obtain by means of byelaws. The power to make byelaws is very limited as compared with the objects for which from time to time we have to get parliamentary powers.

2348. You state that nothing would prevent your having from time to time to come for further powers. My question related chiefly to the existing provisions, whether you think that the law as it now stands might be brought to such perfection in a general Act as to do away with the necessity for any sanitary laws in Manchester, except what may be called byelaws?—Whether you call them byelaws, or leave them as special provisions, the effect would be the same. If such a consolidation took place, our local Acts would be found to be to a very large extent unnecessary, and the number of clauses that we should still desire to retain for rather peculiar or special objects would be so small that the effect would be to do away with the difficulty of ascertaining what the general law was as applicable to Manchester.

2349. Do you think that in that case it would be desirable, in order to make the law clear, intelligible, and well known to everybody in Manchester, that you should repeal all such portions of your local Acts as would be rendered unnecessary by the general Act?—I think it would be better, safer, and save a great deal of trouble, to leave the repealing of those Acts to the local authorities themselves, subject as they would no doubt be to that sort of pressure which is brought to bear upon local authorities from time to time when they come to parliament for the amendment of their Acts. If we came for consolidation it is quite certain that we should have to show Lord Redesdale, and if necessary the authorities in the other House, that there was a reason for continuing any clause which we proposed to continue in force within the city. We should have to show that there were no provisions in the public Act which met that particular case, and in that case we should be allowed in doing away with our special Acts to continue in operation in the same bill such clauses as were found to be wanting, not wanting because they could be applied generally, but simply wanting for the special purpose for which we had required them.

2350. How far in your experience, now extending over 30 years, has the Secretary of State had to interfere with your local administration?—Until section 49 of the Act of 1866 was passed I presume that the Secretary of State had really no power legally to interfere, nor am I aware of any case in which the Secretary of State has found it necessary. We have only had one communication from the Secretary of State since that clause was introduced in the Act of 1866. A most absurd complaint had been sent up to the Secretary of State by some individual ratepayer the particulars of which I entirely forget, but I know that it was a most preposterous thing even to think of troubling the Secretary of State or any of his officers upon such a subject. A copy of the letter was sent down to us. I ascertained what the facts were and sent a full explanation to the Secretary of State, and of course there was an end to it; we never heard of it again. But I think that clearly shows the willingness which must have existed in the Secretary of State's office to deal with the most minute complaint that might be sent in, whereas the Act, as it appears to me, only contemplates his dealing with cases where upon inquiry he thinks that certain special interference is required.

2351. Then you think that no further interference on the part of the Secretary of State is likely to be required by Manchester?—I do not think that any further interference is required, but I am quite of opinion that very extensive additions and alterations ought to be made to the power which is now vested in the Secretary of State, or otherwise it remains open to very many of the objections which have been urged before this Commission; but I think that by comparatively very trifling alterations all those objections might be to a very large extent removed. Certainly my idea was, as I stated at the time, that in 99 cases out of 100 a letter from the Secretary of State to the local authority which was anxious to do its duty would be all that would be required, and very often would be found to be the greatest possible moral support to the corporation. I may take the case of smoke. Of course a local authority in dealing with smoke necessarily treads upon the toes of a good many of those who are perhaps influential people in the community, and there is always a great amount of pressure brought to bear to prevent those powers being carried out. I could mention that that is the condition of many boroughs where they began very zealously to deal with the smoke, but they dropped all their proceedings because they had a sort of intimation given them, in a way which people well understand, that if they attempted to interfere with the business of a great number of people within the community, they would all be sent about their business at the next election. In a case like that, if the Secretary of State had had what he ought to have had, complaint made to him by inhabitants who were suffering from the nuisance, and had sent down a communication to the local authority, I am quite satisfied that in some of the cases to which I refer they would have got over the difficulty at once. They would have had another party, namely, the Secretary of State, reminding the council that if they did not do their duty he would send down somebody to do it for them, which would be much more annoying in all probability than if it were done by the council, and in that way the local authority would be supported. I may mention as an illustration what took place at a meeting of the Social Science Association which was held in Manchester just after the passing of that Act of Parliament of 1866. In the Health Section I heard an influential member of the Birmingham corporation make the statement, that very ample and most satisfactory power was now vested in the Secretary of State; to give an illustration, he said, "I can "tell you what took place in Birmingham, where a "large system as to sewage, involving a large ex- "penditure, was proposed for the purpose of improv- "ing our present condition, and to which we had a "very strong opposition, but we brought forward the "powers which are now vested in the Secretary of "State, and the result was that we secured the unani- "mous decision of the corporation in favour of carry- "ing out a scheme which was so desirable." That is an illustration of what I always believed, and still believe, will be the effect of such controlling power being vested in a high government functionary.

2352. Do you think that the power would often have to be exercised to the extent of compelling by mandamus or otherwise local authorities to do their duty?—I do not think it would, or very rarely indeed. Of course, as I have said, I think that that power requires considerable addition. I would certainly give to the Secretary of State power to make an order in all cases, no matter what it was for, whether it related to the supply of water or the removal of a nuisance of any kind; to make an order which in fact should be final and conclusive, and serve that order upon the board. I cannot see what objection there could be to giving, as was suggested by an honorable member of this Commission, power to apply to the justices to impose continuing penalties upon the local authority, unless they proceeded with due diligence and to the satisfaction of the Secretary of State to carry out the order, either in the terms which might be prescribed by the Secretary of State or in any other way that they could satisfy the Secretary of State would accomplish the object which he had in view; because in that case it would not be giving to the local magistrate any power except to act ministerially in carrying out the order which would proceed from the highest authority. And I do not think that any corporation either would or ought to feel any jealousy of that power being given. In that way it appears to me that it would be a very simple machinery; and I really do not see why it should not be carried out, to enable the Secretary of State to put a district under continuing penalties unless they carried out the works that he might have thought necessary to be constructed.

2353. Do you think that the Secretary of State requires any more information of neglect than he now gets by way of inspection?—That is a question which I am not very well able to answer, but I may say this, speaking for our corporation, and I think I might say the same for others, that we do not object to inspection for the purpose of informing the Secretary of State; he might send an inspector down to Manchester as often as he liked.

2354. Do you think that that would be desirable?—Very often I think it would be desirable, but no doubt the Secretary of State's attention would be, I should think, directed to the neglect or default of corporations even in the absence of any inspection; but I think it very desirable to have increased inspection and increased information.

2355. Do you think that it would be desirable to give to the inhabitants as well as to the local authorities more power to apply to the magistrates for the suppression of nuisances?—If the power does not exist, I certainly think it is very desirable that it should be given. Nuisances may be divided into two classes—public nuisances with which the corporation or the local authority alone could deal, and, secondly, private nuisances, which are rather offensive to individuals than offensive to a district or the inhabitants generally. Inhabitants are disposed to believe or imagine that the local authority is to do every mortal thing for them, and that they have nothing at all to do for themselves. I would withdraw all ground of complaint as far as they are concerned by giving in all cases of private nuisance, which the local authority has power if they think necessary to interfere with, but do not, power to the party aggrieved himself to appeal to the magistrates, of course being subject as he would be to the payment of all the costs if he made an improper and merely vexatious complaint; but I would give him that power in addition to the power which is generally vested under the Act in the local authority.

2356. Do you think that the power of applying to the magistrates on the part of inhabitants should be extended to cases of special nuisances on premises which were not private?—I think that it would be necessary to be very cautious in wording any clause which would give to the inhabitants the power of dealing with those cases. I think that those cases ought to be left rather to the local authority, because I could easily show how there would occur a vast number of cases where it would be very awkward and very difficult to give individual ratepayers the power of disputing or litigating with the authorities. I think that those cases had better be left to the central authority to interfere upon complaint, if the local authority neglected to do its duty.

2357. Supposing the premises belonged to the local authority, who would be likely to make complaint?—I think that plenty of people would make complaint to the Secretary of State very willingly if they had the ground, because it is simply the sending of a letter. I suppose an anonymous communication would not be regarded, but I will mention a case which is in my mind where a local inquiry in Liverpool was instituted by Mr. Taylor, in consequence of a complaint made about the yard for the deposit of the nightsoil before being shipped or sent away from the borough. In Manchester that is one of the great difficulties which we have to contend against. We have not had opposition, but we have had parties down connected with the central department looking at our yard for the purpose of ascertaining how far it was a nuisance, or to what extent any improvement could be made, and I am happy to say that as the result they have generally said that, although it is not the most delightful thing in the world to be looked at, yet the arrangements were such as to prevent what otherwise might be called a nuisance, and it is an absolute necessity that such a place should exist. In a case like that it would be very inconvenient, I think, if a person residing somewhere in the neighbourhood, who probably might have really no serious complaint to make, but still as a mere matter of sentiment might dislike to see it, although we have built our walls so high that they cannot see the deposit of the nightsoil; I say that in that district and in such a case I think it would be certainly undesirable to give to any individual inhabitant the right to bring the local authority before the justices. It is just one of those cases which we are anxious to guard against. We do not want the justices to have under any circumstances a right to become as it were masters of the local authority, because I believe that that would lead to everlasting disputes.

2358. Do you think generally speaking from your experience that the law has been efficient in removing nuisances in Manchester?—I think it is so; I really do think that if the powers are consolidated there is scarcely anything of that kind that could not be dealt with; of course I speak with some degree of diffidence upon the subject.

2359. Can you state the rate of mortality in Manchester?—The rate of mortality in Manchester is certainly not very satisfactory. I observed by the public papers the other day that the rate of mortality in Manchester, and it has been so for several weeks, was 24 per 1,000. In Liverpool during the same week it was 28, in Glasgow 35, and in Edinburgh 39, and in London that week it was 21. Perhaps I may be allowed to read a statement which will be found at page 8 of the paper which I have given in as the answers to the Rivers Pollution Commissioners. We were required to state the rate of mortality, and we give the rate of mortality from 1857 to 1866. We state, and I am desirous of just referring to this, that "The high death rate in "Manchester is largely due to the excessive mortality "in the infant population, nearly one-half of all the "deaths occurring in children under the age of five "years. A large proportion of the children die "within the first year from the want of the care which "is necessary in the earliest months of their existence. "In the years 1851–1860 the total number of deaths "in Manchester and Chorlton from all causes and at "all ages was 74,359, the total under five years "35,963, the total under one year 19,725, or rather "more than one-half the whole infant mortality, and "more than a fourth of the mortality of all ages."

2360. Is that peculiar to Manchester?—It is peculiar, I believe, to Manchester, and probably for this reason. As far as we can judge it arises from the practice of women finding employment in various

ways and leaving their children. Some are known to go to work sometimes within 14 days after the birth of a child, and the children are left to the care of mere hirelings, and I have no doubt a great deal too much of what is usually called "comfort" is given to them. They call it "comfort," I believe, which they apply to the druggist for, and that "comfort" certainly leaves them very often, and very soon with little more liability to discomfort.

2361. Is that mortality chiefly among the very poorest class?—It is chiefly amongst the poorest, not paupers exactly, but the poorest classes. I may be allowed to state that in Chorlton-upon-Medlock, which is a very large township in Manchester, the death rate is only 18 per 1,000; in Cheetham, which is also a large township in Manchester, the death rate is only 16 per 1,000. The districts where the mortality in Manchester is greatest are two; one is chiefly occupied by what you may call the vicious classes, the haunts of thieves and prostitutes and all people of that class, and there is another district which is mainly occupied by the Irish. No sanitary arrangements that can be made will to any very large extent, I believe, affect the condition of those classes—it is something that is beyond the reach of mere sanitary legislation. Manchester is not as a whole an unhealthy town, and I believe if what was suggested was carried out that we should have not only statistics of death, but statistics of sickness; it would then be found that Manchester would compare very favourably with other places. Then again there is this peculiarity, that we have not a large area of rural districts which practically belong to Manchester included within the area for which our death rate is given. I mean rural districts like Broughton—Broughton belongs to Salford and is entirely occupied or nearly so by gentlemen connected with business in Manchester, and for a long time they would not allow a house of under 20*l.* a year to be erected in the township of Broughton. Then, again, Stretford, Bowden, and all those places are occupied by gentlemen who are connected with business in Manchester, but we do not get the benefit of their low rate in determining the death rate of the city.

2362. Do you think it possible that the mortality of Manchester, which even setting aside the number of the population is great, may be attributed to the want of care in smoke consumption and other sanitary regulations?—I have no doubt that this will answer your question; it is a statement made by the officer of health, and it is better than any opinion which I could give. "The mortality at all ages is, however, abnormally great; consumption and diseases of the lungs generally, especially bronchitis, are relatively to the population more fatal than in almost any other locality in England. This is probably due to a considerable extent to the constant irritation produced in the air passages by the dense smoke with which the atmosphere is constantly loaded. Zymotic diseases, including autumnal diarrhœa, also largely swell the death rate." Perhaps I might be allowed just to say in connexion with a subject which has been already before this Commission, that I cannot myself conceive why there should be any obstacle in the way of the guardians giving, in the case of extraordinary diarrhœa, medicine without applying either to the central or to any other board. I may mention what occurred in Manchester when we had diarrhœa a year ago to a very large extent. At the request of the guardians of Chorlton and the guardians of Manchester, we sent up, as we were required, a memorial to the Privy Council to make such an order as would enable the guardians, without being surcharged, to provide at different depôts in the districts where the diarrhœa was most prevailing the proper medicine, free of all cost, for diarrhœa. For reasons which I can hardly understand we did not get the order, but the consequence was (and I believe I may say the Poor Law Board gave a tacit sanction to that being done) the guardians determined that they would make an arrangement to supply gratuitously the proper medicine, but which they were actually supplying at the risk of being surcharged. I believe it was intimated that the Board would not throw any difficulty in the way of their being repaid any expenses of that kind that they incurred. In such cases as these it does appear to me that the cost of medicine would be very trifling, and that guardians might very fairly have the power in any such case of administering medicine, and making any other arrangements which they might think desirable with the view of lessening the evil effects of diarrhœa, because unless the remedy is instantly applied it is no use having it at all.

2363. In your experience are sanitary administrations increasing in Manchester?—No doubt they are increasing. You expressed a wish to know the rates. Perhaps I might as well just state the total. There are five townships within the city. We have a township rate in each township, and a highway rate in each township. A township rate for the purpose of certain expenses which are payable out of the township rate, like scavenging, sewering, and a variety of other charges, and a highway rate for the purposes for which it is necessary. Then we have a city rate, which is for general purposes, and we have other rates to which I will refer. I find that in the township of Hulme altogether the expenditure under the township and highway rates was 9,511*l.*, or equal to a rate of 1*s.* 4*d.* in the 1*l.* The amount in Chorlton for the same purposes was 10,045*l.*, equal to 1*s.* 3*d.* in the 1*l.* The amount in Ardwick was 1*s.* 6*d.* in the 1*l.*, or 4,431*l.* In Beswick, a little extra-parochial district, to which I referred, the rate was 3*s.* 6*d.* in the 1*l.*, 1*s.* being for the township rate and 2*s.* 6*d.* for the highway rate; and no doubt if we could have got the money necessary for the highways in that unfortunate little township we should have wanted 7*s.* 6*d.*, instead of 2*s.* 6*d.*, for it is one of those townships which have been very harshly dealt with by the operation of the law; there are very long turnpike roads cast upon a very thinly-populated township, with very few buildings, and a very low assessment, and of course we can only levy 2*s.* 6*d.* in the 1*l.*, which is quite insufficient for the purposes of the highways. In Cheetham the township and highway rate together was 1*s.* 8*d.* in the 1*l.*, and the amount raised was 6,090*l.* In Manchester the township and highway rate was 1*s.*, and the amount raised was 44,809*l.*, making for the purposes of the township and highway rates an amount of 75,400*l.* levied during one year. In the same year the poor rates of Hulme were 5*s.* 6*d.*; and in the poor rate I may state that the amount required for the city rate, or the borough rate as it is usually called, is included. Our poor rate for Hulme was 5*s.* 6*d.*, making a total of 6*s.* 10*d.* in the year. In Chorlton the poor rate was 4*s.* 4*d.*, making a total of 5*s.* 7*d.* In Ardwick the poor rate was 4*s.*, making a total of 5*s.* 6*d.* In Beswick the poor rate was 2*s.*, making a total of 5*s.* 6*d.* In Cheetham it was 2*s.* 8*d.*, making a total of 4*s.* 4*d.*, and in Manchester 3*s.* 2*d.*, making a total of 4*s.* 2*d.* I may say that the amount of the city rate which had to be raised during the past year, and which of course is divided in proportion to the assessment over different townships included within the corporate area, was 109,000*l.* With regard to the amount of the water rates, perhaps I had better explain that in Manchester the water is distributed upon this principle, and it is the principle that was recommended by the first commission which sat upon the subject of the health of towns. We supply the water to every house within the area of the corporation, and we make two rates, one a public rate, which is paid by all property, whether dwelling houses or other property and the other a domestic rate, which is payable by the dwelling houses only. The corporation are limited in the amount of its rates to the rate which is required to raise the deficiency in the annual expenditure on account of water after giving credit for all amounts received for water sold outside the city for any purpose, whether domestic or trading, and for all water supplied for trading purposes, or for any other voluntary purpose within the city. Then the balance is raised by means of the two rates which

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we are authorized to levy, which are compulsory. Supposing that our expenditure was 100,000*l.* a year, for example, and we received 60,000*l.* a year for the purposes which I refer to, we should be authorized to raise a domestic rate and a public rate, which will realize us 40,000*l.* Last year I find that our two rates amounted to just 40,350*l.* in the year. Then the city rate was 109,000*l.*, and that makes the total amount which the corporation raise in one year for general purposes, including water, about 224,716*l.*; which includes in fact all the expenses incurred for public purposes of any kind, including sanitary objects, paid by means of rates.

2364. What would that be in the 1*l.*?—I have already given you the rate in the 1*l.*, with the poor rate added. In such rates the water rate is not included. The domestic water rate is 11*d.* in the 1*l.*, and the public water rate is 3*d.*, but levied upon the assessable value of the property, and not the gross rental, so that practically that would reduce them.

2365. Has that assessment been altered?—Our assessment alters every year by the increased value of property. The gross assessment of the city, I believe, by the last return made for the purposes of the city rate was about in round numbers, 1,500,000*l.*

2366. I mean does the principle of the assessment remain the same?—Yes.

2367. The increased assessment is from the increase of property?—Yes.

2368. And do you think that by a codification of your own law, or a consolidation of the general law, and a simplification generally of local administration, those rates could be reduced?—I think many improvements might be made in the collection of rates. Whether the actual amount required for expenditure would be very much reduced I cannot say, but that a very considerable reduction might take place in the cost, for instance, of collection I am quite certain. Perhaps I might be allowed to illustrate that by this fact, at the very last meeting of our council a notice was upon the paper and I have no doubt it will in future be adopted by the corporation, that clauses should be introduced in the first Act of Parliament, enabling us to collect the township and highway rates precisely as we now collect the city rate, and the estimate was that there would be a saving to the corporation of 3,000*l.* a year by carrying out that arrangement. We collect the poor rate in this way. The overseers make their return of the assessment of each township, we then divide in proportion to the assessment the amount required to be raised, and we issue a precept to the overseers to pay that sum. They include that in the poor rate and pay it, and we have no expense of collection, nor are the ratepayers subjected to the annoyance of the collector coming for the special purpose of collecting the city rate. If the highway rate and the township rate were collected in the same way it would be in my opinion a very great advantage to the ratepayers, because they would see when they got their note what was the total amount of rates that they have to pay during the year; and they would also know that at any rate they have only to be subject to one collector.

2369. Have you any suggestion to make to this Commission with regard to the powers that are required by law in relation to the disposal of sewage and the outfalls?—In order to consider satisfactorily what powers may become desirable, it is almost necessary to refer at any rate to what may possibly or probably be the nature of the duties which by legislation may be cast upon the local authorities. In our answer to the Rivers Pollution Commission we have stated that we feel extreme difficulty in suggesting any mode of dealing with the great question of sewage, and we refer to the fact that the rivers which come into Manchester are of course necessarily largely polluted by the towns above, up to their very origin, through which they pass before they get into Manchester. The sewers in Manchester find their outfall into one or other of the rivers flowing through the city, and the same rivers receive the sewage from a large number of towns and houses, as well as pollution from a large number of manufactories, before they enter Manchester, and it may be questionable whether such streams when they leave Manchester are much worse than when they enter it. If the sewage of towns is to be interfered with, such interference must necessarily extend to the sewage along the whole course of the river; unless artificial means or conduits, as in London, are constructed with a proper outfall into the sea, and into which all local authorities may be compelled to carry the sewage from their respective districts, it is difficult to see in what manner the natural streams and rivers can be protected from pollution. Assuming that something of that kind may be necessary, which it is quite clear will be if by legislation the local authorities are to be deprived of the opportunity which they have hitherto enjoyed, from their first existence, of fouling streams by turning their sewage into the nearest watercourse, it becomes a very important question what sort of power must be vested in some central board or authority that will have practically the dealing with the whole question. Taking our own districts of Manchester and all the towns by which we are surrounded, if any such scheme as this had to be carried out it is quite clear that there must be appointed a representative body that would really represent the whole district and area that drains into those rivers; it would have to be called upon to pay in such proportions as it might be found that they were interested the expense of carrying out the main works. Then if there were the means of getting rid of the sewage by the existence of such works there would be no difficulty. It would become then necessary for the local authorities to carry their drainage where it is fouled to a greater or less extent from the particular district to the main drain which would be provided for its outfall. I am perfectly satisfied, and I have never scarcely spoken to a practical man who did not agree with me, that as far as our district is concerned it is perfectly idle to talk about getting rid of the sewage by anything like irrigation. The land is not to be had, nor could it be in any way satisfactorily accomplished. The sewage is to be got rid of from hour to hour, and it would be enormous in volume, and I am satisfied that unless we have the means of getting rid of it altogether we shall never be in a satisfactory position. I am anxious to show what general powers must necessarily be given to the local authorities or the central board if this question is to be dealt with at all. Unless some such powers are given we should be utterly powerless. It appears to be absolutely necessary that a board should be established; whether it is to have the conservancy of rivers or not also is quite another question, but there must be a board established which would be able to carry out great works to which all parties would be called upon to contribute, or else we can do nothing.

2370. Supposing, as I think nobody can doubt, that river basins must be dealt with in the aggregate by conservancy boards, do you think that such a prospect affects your city administration in Manchester as to either making sewers or gasworks, or anything in the way of the disposal of sewage?—I do not think that it does, because we have adopted a certain practice, in which we still persevere. Until we know what is to be done as regards the sewage we still adhere to the opinion, upon which we have acted for years, that it is expedient to discountenance to the utmost extent possible the introduction of waterclosets in small tenements, and the still further fouling of the sewage; we have something like 36,000 ashpits in connexion with privies, and I suppose we may have perhaps 10,000 waterclosets throughout the whole of the city.

2371. When I was President of the Board of Health did you not bring in a bill for the purpose of taxing waterclosets?—We did do so, and you were kind enough to say that you would not oppose that bill, but we were opposed by the sanitary fanatics, and they induced the Committee to decline to give us that power. Instead of giving us power to tax the

first watercloset, they put in more stringent regulations that we should not charge anything for the first watercloset, and that we should be bound to supply them with water. That, however, has made no difference in our practice.

2372. You are still now after 10 or 12 years' experience advocates for the ashpit system?—Yes, for the privy and ashpit, when properly constructed, at any rate, and we are perhaps more strongly advocates of it now than we were 10 years ago.

2373. How far is it self-supporting by the sale of sewage?—It is not self-supporting by any means; we recover back one-half only of the expense probably that we incur in removing the nightsoil; but if we had no nightsoil to remove, the expense of removing the ashes would be in our opinion quite as great as the amount which we now spend, or rather as the deficiency which now exists in removing both, because we should still have to get rid of the ashes, and the difficulty would be increased enormously, because even now there is great difficulty in knowing what to do with the ashes; it would be a large expense and no return, and as Sir William Denison has been telling us at many of his meetings the great evil under which we, Manchester and other neighbouring towns, are suffering, is that we have too little water and too many ashes. Until we have determined what to do with the sewage it certainly is inexpedient to foul it more than we can possibly avoid.

2374. Have you any suggestion to make to the Commission relating to your byelaws with reference to streets and buildings?—I do not think that any alteration in the law as it now exists is desirable with reference to byelaws. I think it is much better that byelaws with regard to buildings and streets generally should, as now, be made with the approval of the Secretary of State; there are so many alterations required from time to time, that I think it would be exceedingly inconvenient if those byelaws were in any way introduced into an Act of Parliament. At the same time, I cannot myself see any reason why a byelaw as approved by the Secretary of State should not have the force of law.

2375. Do you approve of the code which now exists?—No; I neither approve of the code nor the powers given to make that code. I can give the Commission an illustration of what sort of local legislation is constantly required. Here is a bill which we have in Parliament this session; we have only adopted those building byelaws a short time ago, and when we adopted them we adopted them under the very same provision as exists in the Act of 1866, and we took the byelaws precisely as they had been approved and adopted by the local boards and authorities round Manchester; but we very soon found when we came to consider and look at those byelaws carefully with a view to possible litigation, that there were very many of those byelaws which were utterly unauthorized by the power under which they are avowedly made, though those byelaws had been approved by the Secretary of State. We consequently have had to introduce into our bill this session several clauses which in my opinion are absolutely necessary to enable us to carry out what is intended by those byelaws, but which the power itself to make the byelaws does not give. I can illustrate that by alluding to the power under which those byelaws are made. I can show in a moment what I mean. Referring to the 34th clause in the Local Government Act of 1858, we adopt in our Act the same clause without any alteration. And only a short time ago we adopted the byelaws which had been sanctioned for other places, and which include byelaws as to the size of rooms and various other matters of that kind. We were told that that byelaw could not be maintained, and when I came to look at the Act I felt satisfied that it could not. The 3d clause authorizes byelaws to be made "with respect to the "sufficiency of the space about buildings to secure the "free circulation of air and with respect to the ven-"tilation of buildings." We were told, and I believe rightly, that a byelaw fixing the size of rooms, or the number of cubic feet, was not authorized by that clause, and I doubt very much whether it is, and we have consequently been satisfied that if we could fix the height of rooms as sleeping or dwelling rooms we should effect the same object, and we have a clause in this Act enabling us to fix the height of any room. Then, again, as to what is to be considered a new building, and subject to the byelaws, it says: "For the "purposes of this Act the re-erecting of any building "pulled down to or below the ground floor," and so on, "shall be considered the erection of a new building." That of course must be construed literally; and we cannot interfere with any building which has not been taken down to the ground floor. We soon found builders in Manchester taking down their buildings piece by piece and rebuilding, and we have had cases where the whole structure has been rebuilt and not a brick of the old building left, but to which the byelaw would not apply. We have tried to meet that by the 35th clause in our bill, now before the House of Lords, which provides that "In case any person shall "make any addition to any building erected after "the passing of the Manchester Improvement Act, "1865," (which was the Act containing the power to make byelaws,) "or shall" (and these words were inserted by Lord Redesdale, which is only a proof of the carefulness with which he examines all bills), "for the purpose of evading the byelaws for the "time being in force in relation to buildings, take "down any part of any building, whether in an old "or a new street, with the intention of rebuilding "the same, then the same," shall be subject to the byelaw. Again a case was taken before the Court of Queen's Bench, who decided that a man was not contravening the byelaw who delivered his plan, and the moment he delivered his plan set to work to erect his buildings, as he was doing so at the risk of having his building pulled down. We have, therefore, inserted a clause which makes it obligatory on any person who is going to build to give us in fact 10 days' time to approve of the plans, and if we do not disapprove of them within those 10 days he may go on building subject to the byelaws, or if we give him notice within the 10 days that he must alter his plans, then he cannot go on doing so without satisfying the corporation. There are many other clauses in that bill. It shows the sort of legislation we are constantly requiring in order to meet the difficulties which in practice we experience, but the difficulties I have referred to we have met with in connexion with the byelaws. My strong opinion is that the byelaws are every year being more carefully considered by the Secretary of State, and I have no doubt now that the Secretary of State could without any difficulty establish a satisfactory code of byelaws, but increased powers must be given for the making of byelaws. The power ought to include everything which could be thought to be likely to be required, because you must go back to the power in order to ascertain whether your byelaw is authorized, but I think that byelaws which are approved of by the Secretary of State might very fairly be declared to have the force of law, and I do not think that anyone could reasonably complain if the power of taking your byelaws to the Court of Queen's Bench for the purpose of trying to show that some possible form had been omitted or that there was some technical objection that could be taken were withdrawn. If any objection could be shown to a byelaw it is quite certain that the Secretary of State would be quite willing to sanction an alteration, and the local authorities would be compelled to modify it, if it could be shown that any modification was necessary. I think it is very desirable that the power should continue as now in the hands of the Secretary of State.

2376. Have you any experience of the sanitary administration of rural districts?—No, I have not had much experience, but I can state very shortly what appears to me to be desirable. I am strongly of opinion that there ought to be by some means or other

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power to impose upon some local authority the responsibility of carrying out the general sanitary Acts to the extent required in all districts throughout the country. As far as regards local districts that contain a considerable amount of population, subject of course to the power which the Secretary of State has of arranging the districts with reference to the powers that would have to be carried out, both as regards sewerage and water and other matters, it seems to me to be very desirable that there should be a local authority of a representative character in any such district where the population really would justify that arrangement, and that in addition to the elected representatives, because there would be a large amount of taxation necessarily involved in introducing and carrying out the Acts; it would be very desirable if a certain number of gentlemen, magistrates, who were connected or might be connected with the district locally or by property, were also on the board *ex officio*, but not quite in the way in which they are *ex officio* members of the board of guardians, but that a certain number should agree to become members of the local board, and undertake as far as it was necessary, in common with the elected representatives, to discharge their duties; there is no doubt that such *ex officio* representation would very much increase the efficiency, and probably give increased confidence to the working of the local board. Then in other districts, strictly rural districts, where it would appear to be impossible to elect a body of that character, but where it would still be necessary that sanitary provisions to a certain extent should be in operation and carried out, it appears to me that probably the most convenient authority to leave that part of the duty to would be the guardians, and on this ground, that there are guardians, I presume, in every district, and that their interference would be very rarely required in such a rural district as I am contemplating, and that the guardians could very easily, without much addition to their own peculiar functions, carry out to the extent required the sanitary Acts. In my opinion if there is only one house it seems just as necessary that there should be the same sanitary arrangements carried out with reference to that house as if there was a street, and if there was a street there should be the same sanitary arrangements carried out with reference to that street as if there were a number of streets collected together; the object is to prevent in the very early history of a town the bringing into existence those objectionable constructions and other matters which afterwards lead to so much difficulty in remedying them. Therefore it appears to me that it is just as necessary for a comparatively rural district that sanitary laws should be in operation, and that there should be some authority responsible for carrying them out, as in towns. To show the necessity of it in towns, I may mention what occurred quite recently in the neighbourhood of Manchester. A gentleman told me that he had been selling a large quantity of land for building, but that three or four builders of a low class of property who actually had agreed to buy his land had recently told him that they should decline to fulfil their contracts as they had made arrangements to buy land in an adjoining district where they were not to be bothered and annoyed by building byelaws.

2377. Have you any opinion as to the expediency of the ownership and management of both waterworks and gasworks being vested in the local authorities?—Yes; I have a very strong opinion that it is very desirable that in all cases where it is possible or practicable the ownership of the works, both water and gas, should be in the local authorities. For as far as water is concerned, it is obvious that they should have the power as well as the responsibility and the duty where it is practicable of supplying the inhabitants with water; and as regards gas where small towns in their early history undertake, which they would be obliged to do either by a company or by themselves, to form gasworks and to supply the inhabitants with gas, it is always found as the result of time that the gas business is a profitable business; the gas is supplied at a desirable price, because in fact the inhabitants regulate the price themselves to a great extent, and the profit which would otherwise go into the hands of the company, 10 per cent. or whatever it may be, which is very easily made if there is any population, can be expended for the benefit of the inhabitants generally. In Manchester we have the waterworks, and perhaps I may state that where there is a water supply obtainable from another corporation there is no reason why the local authority should either have the expense or trouble or responsibility of providing works of their own, and although our population is only about 380,000 we practically supply water to the whole district. I suppose we supply water to a district which will contain a population of 750,000 inhabitants, and we have expended already in our waterworks upwards of 1,800,000*l.* By that very bill which I have just handed to the chairman we have power to borrow 200,000*l.* in addition to the powers which we already possess, which are not yet exhausted, for the purposes of our waterworks. It seems as though the expense was interminable, but great as the expense is, the advantage to the district is far more than in proportion.

2378. Have you had occasion to borrow largely for other than waterworks?—We have borrowed for other works, and in connexion with that perhaps I may be allowed to state that in my opinion there is nothing which would encourage local authorities so much to carry out sanitary works as increased facilities for obtaining the money required. I believe that it would give extra inducements to local authorities to carry out works which might be suggested and recommended if they saw that there was a ready means of obtaining the money.

2379. Might not the facilities be too great?—No; in my opinion danger in that sense would scarcely exist at all, but the difficulties now of obtaining money are so great as to throw very great obstacles in the way of any local authority; a small local authority representing a small district cannot borrow money readily, if at all, under five per cent., and they are obliged to borrow subject to repayment at a very short period.

2380. What sort of period?—From five to seven years. It is very difficult to get people to lend for as long as seven years. We have had that difficulty in Manchester. We have borrowed from the Bank of England 750,000*l.* repayable in 20 years by equal annual instalments, we borrowed 100,000*l.* odd from the Public Works Loan Commissioners repayable in 20 years, and we have borrowed under the Act which was passed at the time of the cotton famine 150,000*l.* upon the terms authorized by that Act.

2381. What sort of additional facilities would you propose?—I think that the Public Works Loan Commissioners should be authorized to lend to local authorities for the purpose of carrying out any works which have been sanctioned if not required by the central authority the Secretary of State, repayable by equal annual instalments, those annual instalments, including the interest and a portion of the principal; it would be necessary to repay the whole amount by a sinking fund at the expiration of 20 or 30 or 50 years, whichever might be the time fixed, at a rate of interest certainly not exceeding four per cent., and that increased facilities should be given for carrying out any such powers. It was not satisfactory as it used to be carried out under the Loan Commissioners. They now, I believe, as a rule, do not under ordinary circumstances lend money under five per cent., and therefore they do not lend at all, because nobody would think of going to a public department to borrow money at five per cent., but formerly the practice, as I know from experience, was this: supposing we borrowed 100,000*l.*, it was payable in four instalments. I am speaking now of what actually occurred. Although the rate of interest agreed upon was 4*l.* per cent., we had a mortgage for the first instalment, which cost a considerable sum of money, at five per

cent.; we had a mortgage at five per cent. for the second instalment, and also a mortgage at five per cent. for the third, and another for the fourth, and then when we had received this amount agreed to be lent, and when we had been paying interest at five per cent., we had the four mortgages consolidated by another long deed, and the interest reduced to four per cent., and credit given to us for the excess of interest between four and five per cent. that we had paid in the meantime. That was the practice, but that it was an unnecessary practice was proved most abundantly by what took place at the time of the cotton famine. We borrowed 150,000*l.* at that time, and it was a very unsatisfactory financial operation, because we took that money with the understanding that we would to the extent that we might find practicable employ the operatives. The consequence was that we could not get a tender for our works except upon most unsatisfactory terms and a schedule of prices which under other circumstances would never have been heard of. The operatives to a very slight extent came for work; they came for a short time, but they soon tired out and left; but we were left with our contract, and the expense to us of a comparatively small contract was very large indeed. What, however, I was going to say was, that in borrowing that money through the interference of the committee over which Lord Derby presided, our expenses were enormously reduced, it was shillings instead of pounds we had to pay, and the red tapeism, as I call it, of the former arrangements all disappeared. We got our mortgage in the way in which any man of business would think was perfectly easy and practicable; we paid little or no expense for it, and we had no trouble.

2382. Do you think that you ought to have power to raise money from a Government office at a cheaper rate than you can get it in the market?—Yes, but it is not only the rate. As far as regards Manchester, of course we can borrow under very favourable terms. We have a debt which represents millions, and on that debt, although we have often to go into the market and borrow at unfavourable times, we do not really pay more than 4*l.* 1*s.* 6*d.* per cent. or something like that; we therefore can borrow money upon favourable terms. But even taking the case of Manchester, which has those means in its power, I still say that it would be the greatest possible advantage to us, and it would be a great encouragement to us even to carry out the necessary sanitary improvements, if we could borrow the money if only at the same rate of interest but upon the terms that would give us a lengthened period for the repayment of the amount in equal annual instalments. That is an arrangement which you cannot make with private lenders; you can only make that arrangement through the instrumentality of the Government, and if the money was lent at four per cent. it would of course be a profitable operation, and is I think one of the most justifiable ways of appropriating the monies.

2383. What is your opinion as to the amount of compensation to which local authorities are liable in various improvements?—As far as regards that we of course have to pay what is assessed, and I am sorry to say, as far as my opinion goes, experience shows that we must suffer for any property with which we in any way compulsorily interfere. The compensations which are extracted from local authorities are very large indeed. Supposing we are going to make a new street through old rubbishy property, the moment we look at it architects put their heads together, and the property goes up to an enormous extent in their estimation, and their opinion has to determine to a very large extent the price to be paid when you go to an arbitration or a jury. Then when we come to determine the amount which is to be paid for this property, although in strict law the arbitrators ought not to take into consideration the effect of the improvement in increasing the value of the property, practically they do it, and you cannot prevent it, because the owners often are able to show purchases made from time to time by parties who, relying upon the improvement being carried out, give extravagant prices. Then it is very difficult for the arbitrator to do otherwise than admit that what has been paid in the market is the value of the property, and I do not see how it is to be avoided. But in addition to this, whilst they make you pay an enormous price for the property, it is the practice to add for the probable value which would have been obtained if you had not interfered, varying from 10 to 15 or 20, or in Manchester about 25, per cent.; that is to say, after they have fixed the full value of the property they add 25 per cent. for what they call compulsory sale. As I have already explained that would not arise to the same extent in dealing with property under the Artisans and Labourers Dwellings Act, because there the principle is declared by the bill itself that you are to pay for the property as property in fact condemned, and practically as unfit for human habitation, and they cannot extort these large amounts from you.

2384. (*Earl of Ducie.*) You stated that you borrowed a large sum of money from the Bank of England for various improvements. What interest did you pay to the Bank of England?—We paid four per cent. We did borrow temporarily a certain sum at 3*l.* 10*s.* per cent., but that was only for a short period of years; and it was clearly understood that the amount, which was 150,000*l.*, was not then to be repaid, but that we were to make arrangements as to the mode and time for the repayment. Unfortunately the rate of interest had gone up very much at that particular period, and the Bank of England screwed us most awfully. They made us pay five per cent., and they would not let us have a shorter term than five years for the repayment of that 150,000*l.*; but for a large sum that we borrowed we paid four per cent.

2385. You stated, did you not, that the infant mortality at Manchester is equal to one-half of the whole mortality?—Yes, I stated that the mortality under five years is equal to one-half the whole mortality, and the mortality under one year is one-half of that.

2386. Can you tell the Commision whether the children who are under the care of the guardians in the workhouses or in the district schools are liable to a similar mortality?—I really cannot, but there is very little doubt that they would not be liable to the same amount of mortality, because I am quite sure that under the care of the guardians as well as under the care of the managers of the industrial and ragged schools, they would be much better looked after and much better cared for.

2387. In all probability then the ordinary conditions of infant mortality in Manchester are reversed?—No doubt. At any rate they are not so unfavourably situated; I am satisfied that would appear from the statements with reference to the whole mortality of Manchester.

2388. (*Mr. Hibbert.*) Is there any difference in the rate of mortality amongst the infants in the different districts of Manchester?—There is no doubt about it.

2389. That is to say they are inhabited by a different class of the population?—No doubt; although I am not able to state the exact details, I am satisfied that this very high rate of mortality arises in those districts which I have referred to as being specially the unhealthy districts of the town.

2390. I want to know whether this high rate of mortality amongst the children principally exists in those districts which are occupied by persons working in factories, for instance?—I am not able to speak positively, but I should say that no doubt that would be found to be the case. I have given information to the Commission rather as it has been put before me by the officer of health.

2391. Do you know whether there is much overcrowding in the districts of Manchester?—Yes, there is no doubt that there is very considerable overcrowding in some of the districts, and that is one of the great difficulties with which we have to contend. The overcrowding takes place chiefly in those districts

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which I have said are the most unhealthy, where the Irish population reside to a great extent.

2392. Do you think that you require greater power with respect to that evil?—Whether there is any necessity for greater power I doubt, because the powers which already exist seem to be very great, because you may interfere with overcrowding almost under any circumstances. I forget when the Act was passed, but we formerly had difficulties in interfering where they were not lodging houses, but there is an Act I know in force now where the definition of lodging houses has either been very largely extended or does not exist, and we have now power to regulate the number of people that are to be allowed to dwell in the houses although they may not be common lodging houses. There was formerly this difficulty, people said, We are not lodgers, we are simply friends who live together. In those cases no doubt they were always members of different families, but it is almost impossible to limit the overcrowding where they are members of the same family, in that case you cannot interfere.

2393. Have you ever put the Act into operation?—Yes, there is no doubt that it is in operation continually. The carrying out of that Act has been imposed upon the chief constable in connexion with the business of the police, who make a regular inspection, and whenever they find houses unduly crowded they enforce the regulations which have been made, and which have been approved of by the Secretary of State, as to the number which shall be allowed.

2394. Do you know whether this great rate of mortality is higher on the banks of the rivers which run through Manchester than in other parts of the town?—No, I do not think it is. I think that there are comparatively few houses now on the banks of the rivers, they have been gradually removed, so that I believe that there is no excessive mortality that can be attributable at all to the effect of the rivers.

2395. Generally are they low-lying districts where this mortality exists?—I do not think that that is a special characteristic of those unhealthy districts. I think it is the reasons which I have already referred to that make them so unhealthy, and not their physical position.

2396. You have stated that in cases of violent diarrhœa or an epidemic of that nature you think that the guardians should have authority without applying to the Poor Law Board to supply the necessary medicine, would not you go further than that and say that in giving medicine to those persons it should not make them paupers?—Yes, certainly.

2397. I presume when medicine was given by the guardians in the case you have alluded to, all the persons receiving it would become paupers for the year?—I really am not prepared to say whether that would be the effect. If it would be the effect it seems to me most unjust and very desirable that it should be removed, because in the case that I am supposing the proposition was that there should be a depôt in those districts where the diarrhœa was said to be most prevalent where anybody that chose, no matter what their condition, could have gone and got the diarrhœa medicine; they would not be so fond of it to take it unless they wanted it, and if they wanted it it was most desirable in whatever condition of life they were that they should get cured.

2398. You would not look upon it as medical relief?—Certainly not so as to pauperize the parties.

2399. You said that you thought it would be desirable that byelaws should have the force of law; do you think that a plan similar to that adopted by the Poor Law Board, in cases where they make a general order which has the force of law, might be adopted by the central authority?—Whatever objections might possibly be suggested would be far stronger in reference to orders of such an important character as are often made by the Poor Law Board than they could be as against a matter of detail of the kind that we are talking about. Certainly it might be left to the Secretary of State to frame orders of that kind. I cannot see how anybody can object to those orders when you have his sanction having the force of law.

2400. You are aware, are you not, that the general orders now made by the Poor Law Board are laid upon the table of the House of Commons?—Yes, I believe so.

2401. Would you recommend a similar course with respect to byelaws which are to have the force of law?—If it were thought desirable I can see no possible objection to it, but it does not appear to me to be even necessary.

2402. If you did that and gave power to the Secretary of State to make byelaws which should have the force of law, would not it be possible to place all towns under a general code?—No; I think that the necessity of making alterations would so often arise, that it seems to me that no object would be gained by putting them under a general code. The Secretary of State no doubt in practice would insure as far as he could, uniformity. Having adopted a code, he would not allow that code to be varied from, unless some sufficient reason could be shown, arising probably out of the circumstances of the locality, and in that case he would sanction a modification; and it seems to me very desirable that that power should be in the hands of the Secretary of State.

2403. Is it not the case that those continued applications to Parliament for improvement bills by different towns are a source of considerable expense to those towns?—No question about it. There is great expense connected with it; therefore, I think you may rely upon this, that unless there is a necessity local authorities will not incur that expense; they want no interference to prevent unnecessary applications.

2404. Would not it be possible with respect to towns like Manchester and Liverpool or other towns, that instead of coming to Parliament for a special bill, you might go to the Home Secretary and obtain powers under byelaws, and that the towns to which those byelaws would refer might be put in a list just as unions are placed in a list in a general order issued by the Poor Law Board?—It strikes me that that would be a very objectionable power, and I do not think that it would be likely to be adopted. It would be giving to the Secretary of State upon matters which had never been considered in any way by Parliament the power in fact of passing Acts of Parliament. The general law would include most things, and the power to make byelaws of course is given with regard to certain matters where it is felt that that power is necessary in order to carry out the working of the Acts of Parliament, but there are various other matters which Parliament alone ought to be able to deal with. It would be distinct and new legislation, and I think that it could hardly be put into the hands of the Secretary of State in any way. The power to make provisional orders is as I understand it limited simply to giving power for the compulsory purchase of property; that is a very useful power no doubt, and it is one that I am satisfied with, and should be glad enough to take advantage of if we were going to Parliament simply for the authority to carry out an improvement; but that never is the case, and I am afraid never will be. We always want other powers which we could not obtain by means of a provisional order, and in that case one expense includes the whole.

2405. Do I rightly understand you to say that you do not consider it necessary to give any increased inspection to the central authority?—No; I would not give any increased power in that direction. I do not express any opinion as to the number of inspectors that might be required to give all information necessary for the Secretary of State, but I would certainly give no increased power to the inspectors to interfere with the local authorities, whether in large or small towns.

2406. You do not think it necessary that the inspectors should be travelling about the country, but rather that they should go to visit places from which

they receive complaints?—Yes; I certainly should think that that was quite sufficient; either where they received complaints or where, as is now the case, the death rate or other circumstances of a casual or temporary character seem to call for some special interference.

2407. In the case of towns or districts that are under the Local Government Act, would you recommend that any intermediate authority should be placed between them and the central authority?—Certainly not; I cannot conceive myself of anything that, in my opinion, would be so unworkable and so unsatisfactory, as that intermediate authority consisting of county justices or a county committee. It would be most undesirable and most objectionable to establish any such intermediate authority as has been described between the local authority, either now existing or to be created, and the central authority by means of a county board as I think it has been called. It was said that it would be a useful buffer, but my opinion is, that instead of being a buffer it would be an obstruction, and it would lead to constant and very inconvenient collisions. In my opinion any interference on the part of county justices with the local authorities, instead of doing good, would rather tend to create difficulty and opposition on the part of the local authority. I think that the central authority alone ought to have that power to interfere, or some high Government functionary, with the responsibility which attaches to his position; and the knowledge that anything which is done can be the subject of inquiry before Parliament.

2408. Supposing that a local authority refused to carry out works which were recommended by the Secretary of State, do you think it desirable to leave the law as it at present exists?—Certainly not. I have already stated that I would give the most complete power to the Secretary of State to enforce upon the local authority through the magistrates the compliance with any order that he might make, and I would give to the magistrates in those cases power to impose continuing penalties upon the authority that failed to do its duty, leaving the authority to arrange, by negotiation with the Secretary of State or his officers, whether the works are to be carried out in the precise manner that he might prescribe, or in any other manner, which no doubt the Secretary of State would be glad to modify if they could satisfy him that the object in view would be accomplished as well in any other way. In the first instance my impression was that the application would be for a mandamus to the Court of Queen's Bench, but the more I think about it the more reasonable it appears to me that there should be given to the justices a summary and ready means of imposing a penalty upon a district that failed to comply with the order of the Secretary of State. That would not be an interference such as I object to on the part of the county justices; it would be simply making them ministerially assist in carrying out effectively that which was the intention of the power given to the Secretary of State.

2409. Do you mean the justices in petty sessions or quarter sessions?—In petty sessions, certainly not the quarter sessions; that would lead to very inconvenient and long delay. I should give power to the magistrates in petty sessions to say to the district, "We impose a penalty of 20*l.* and 5*l.* a day for every day that you fail to carry out the works." But in those cases there would really be a kind of understanding that the penalty would never be asked for if the duty which was imposed upon the authority was carried out.

2410. Supposing that the general laws are codified as is proposed, would you make them applicable to all places, or would you recommend that one code should apply to populous districts and another code to rural districts?—I speak with very great diffidence upon this point, and it is necessary that I should have a very perfect knowledge of all the clauses in the Act of Parliament to give a very satisfactory opinion; but as far as I can see, I really do not see what inconvenience or difficulty there would be in putting any local authority in possession of all powers relating to sanitary matters, whether they were really representing a large or a small or a thoroughly agricultural district. The powers are only carried out to the extent that circumstances require, and the circumstances in rural districts are constantly changing; and when a necessity to carry out any power did arise, why should not the local board be in possession of the same powers as are given to any other locality? If any of the powers were obligatory upon the local board without reference to the circumstances, then it might be inconvenient; but as far as my knowledge of those Acts of Parliament enables me to speak, I think the clauses merely authorize interference when the circumstances referred to in any clause seem to call for it; therefore I do not see why there should be any distinction.

2411. I presume you are aware that under the Local Government Act it was allowed to be adopted or not as places saw fit?—Yes.

2412. Would you leave the law in the same state?—No, certainly not. It is very difficult to suggest how it is to be accomplished, but it seems to me that the duty and responsibility of carrying out sanitary provisions ought to be in some way imposed upon a local authority in all parts of the country, and that it ought not to be left to either the inhabitants or anybody else to say whether they really will or will not have such provisions in operation.

2413. Would not it be possible to have two codes, one to apply to populous districts and another to apply to rural districts?—I think that my previous answer shows that, as far as I am informed, I do not see what is the object or advantage of having two codes; I believe the honourable member perhaps means that it might alarm the district if they saw a great thick book and were told that all those powers were in force within the district, but inasmuch as they would be easily informed that they were only powers to be exercised if required, I do not see what objection they could reasonably have. Take for instance smoke, you would hardly know what code to put smoke in. In a thoroughly agricultural district it would seem absurd to have a provision about black smoke, but you may have works of some kind established in that district which you might find the greatest possible advantage to be able to deal with, and to be able to stop anybody who might come and pollute the air of even a thoroughly agricultural district, and many other provisions might be referred to in the same way. With regard to the structure of houses, why should not they apply to rural districts the provision of necessary conveniences just the same as in towns? and with regard to the provisions of water or sewerage, even in an agricultural district, you cannot tell how soon sewering might become a matter of importance, and the powers ought to be there to be exercised whenever the necessity happened to arise.

2414. I understand you to mean that you would have the same powers given to the authorities whether they were the authorities of rural districts or of towns under the Local Government Act or under municipal corporations?—That is my impression with the information which I now possess; of course in consolidating the Acts of Parliament it would very soon be seen whether there would be any portion of the provisions that should be left to be brought in by some other arrangements and not immediately put into force, but I do not myself see that that necessity would arise.

2415. I understand you to say that you would utilize the boards of guardians in rural districts as the health authorities?—Of course I gave that opinion with great diffidence; but it seemed to me that it was almost the only authority that you could refer to that would exist in every district. Certainly the surveyors of highways do not appear to have so much to do with sanitary matters as the guardians, and I am assuming that the guardians would only really be called into action in such districts as were so com-

pletely rural and where the population was so very limited that it would not be found either necessary or desirable or practicable to have an elective local board.

2416. You are aware that the vestries of parishes are the sewer authorities of parishes, and the surveyors of highways are the authorities for highways, and the guardians are the nuisance authorities; would you consolidate all those in one body?—Undoubtedly. I certainly would have only one authority. There is only one matter that it seems might possibly be left and necessarily left to the guardians, and which they would have to carry out, and that is the Diseases Prevention Act, which only comes into operation under certain extraordinary circumstances; but I would most assuredly carry out as far as possible what really exists at the present moment in Manchester, and I am of opinion that there should be only one authority to deal with all questions relating to the public interest. We have only one authority in Manchester, and I think it is very desirable that that state of things should exist wherever a local authority is brought into existence.

2417. (*Lieut.-Col. Ewart.*) Have you met with any cases in your experience in which it has become desirable to annex an outlying district to the administrative area?—I can hardly say that I have met with such cases. No doubt such a district might exist, and some discussions have from time to time taken place as to the desirability of districts immediately around us being included within the area of the corporation of Manchester. Some districts have felt rather desirous to be included; but the corporation have not entertained such suggestions very favourably. We have never taken any steps for the purpose of enlarging our municipal boundaries, but I can very well believe that cases would very frequently arise where it would be most desirable, with the view of simplifying and more effectually carrying out the powers, that the district of an existing authority should be very considerably extended, both with reference to the supply of water and to drainage, and many other matters.

2418. As it now stands I believe that can only be done by agreement on both sides?—I believe that is so. The Secretary of State is to be put in motion by the district, and certain steps gone through in order to obtain the consent, I think it is, of a majority of the ratepayers. I am not quite sure what it is, but I think it is very desirable, and it would be almost a necessary part of the scheme which I have had in my own mind, that if there was power to impose upon a district a local authority, there should also be power in the Secretary of State to determine what the area and the boundary of that district should be, because it is quite clear that that area would be determined as the result of very many and very important considerations, and the local authorities would have to be summarily dealt with, no doubt, or else you would probably fail in accomplishing much good.

2419. Take a large town where a suburb grows up, what would you say in that case?—Or even a small town, where there is a suburb having a local authority, it would occur very often in districts which are more populous than their surroundings, that, for the purpose of general legislation and the carrying out of general sanitary provisions, it would be most desirable that the power should exist and be exercised of including within such areas the surrounding districts.

2420. What system of inspection have you in Manchester for health purposes?—Our system of course depends upon the nature of the duties which have to be performed. We have a very large number of inspectors having to discharge different duties. For instance, we have four or six inspectors who are solely occupied in looking after the general nuisances which arise within the town. We have certain inspectors who are appointed to go round to see that the privies and ashpits are not in an unsatisfactory or uncleanly condition, and partly with the object of giving notice to the authorities who are responsible for the removal of the nuisance themselves. When any privy is found to be inconveniently full it has to be immediately emptied; and we have also inspection of weights and measures, a separate department, and we have also inspectors of lodging houses and other houses to prevent overcrowding; that is in fact under the chief constable, so that there are different inspectors for almost every branch of duty which devolves upon the local authorities, and in Manchester from the size of the place they are necessarily very numerous.

2421. What classes of persons do you employ as inspectors?—We have an intelligent sort of men, but not at a high salary. There is a superintendent of course in every department, who has a tolerably good salary, but the rest of the men I should think receive (I do not exactly know their wages) from 25*s.* to 30*s.* a week. They are paid somewhat in the same way that you would pay inspectors or serjeants of the police force.

2422. Do you use your police force for the purposes of inspection in connexion with health?—It is part of their general duty to inform us of all nuisances which they meet with in the course of their rounds, and the fact is that quite as many cases are brought under the notice of committees of the council through the instrumentality of the police, indeed I may say more than are brought under their notice through the instrumentality of the special inspectors. We make use of the police to the extent that we can without interfering with their duties in exercising a general supervision with regard to matters of that kind.

2423. Does your experience lead you to think that, as a general rule, it is a good plan to use the police for those purposes?—Yes, where it is simply a matter which is obvious to them and seen in the discharge of their duties. For instance, I have felt that it would be a great advantage if the police were instructed to report every black chimney that they see (which has never been done yet), because they are going about the town continually, and they would be more likely to see them, for they only smoke for short periods, and a chimney might be smoking very often without being seen by the inspectors, who go from place to place in their rounds But I think it would be very undesirable, and we always object to the police being allowed, to interfere in any way which would bring them into collision with the inhabitants. Their duty would rather be that of reporting any offence which they see committed, and then leaving the party to be dealt with by the authorities at the town hall, so as not to mix them up unnecessarily with the inhabitants.

2424. Have you any organized system of inspection when new buildings are completed before they are occupied?—Yes, that is a part of the byelaws, and it is carried out. I do not mean to say that it is always carried out effectively, because we do find that in spite of the byelaws parties do take possession of houses before the house has been inspected; but as far as we can it is the object of the corporation to inspect all houses, and to see that the plans which they have previously submitted and got approved of have been carried out fairly with reference to those byelaws. I am not sure whether this power exists now under the general law as to a continuing penalty. We found that we had not got it under our Act, and therefore one of the clauses of the bill which we have in Parliament this year is to impose not only the penalty of 5*l.*, which is given by the general Act, but also a continuing penalty per day, because the only alternative beyond the 5*l.* penalty formerly was pulling down the house, which was a very undesirable remedy; so that it is very important, in order to carry out byelaws that there should be the power really to compel the owner to do what is required by making him subject to a continuing penalty if he neglects his duty.

2425. (*Sir Thomas Watson.*) You have expressed your objection to the use of waterclosets in Manchester; has there been any experience of the earth closet or the earth latrine there?—I do not think that we

have any experience in Manchester of what are strictly called earth closets. The fact is that the arrangement which we try to carry out is to deodorise to the extent practicable by means of the ashes which necessarily are met with in every dwelling, and by an improved construction of ashpits. There is a grid, as they call it, to allow the small ashes to pass into the ashpit, and in that way also to have them cast on the fœcal matter, and it is generally said, and I certainly have been in privies and ashpits which have been constructed upon a good principle where there has not been anything like the smell which, I am sorry to say, I certainly often experience in waterclosets in hotels in London.

2426. (*Dr. Acland.*) You have a health officer, have you not?—Yes, we have Mr. Leigh. He is a medical man, and he has for the last 25 years been devoting a very large amount of attention to sanitary matters; in fact, I may say so much so, that the Registrar General has in one or two instances, published in the reports which he laid before Parliament the reports which have been made of Manchester as to sanitary matters by Mr. Leigh. That was before he was appointed our officer of health.

2427. What are the duties which you would assign to him?—There is no attempt to define the duties which are assigned to the health officer; he is left very much to do what he may think desirable with a view to improving the sanitary condition of the city. At the same time we have a health committee, and one of the most important matters which they have been directing their attention to through Mr. Leigh has been the dealing with property of an unsatisfactory character, and where disease was constantly arising to a very undesirable extent, and the corporation are endeavouring to carry out (of course there is a little difficulty in introducing any change of system) to a very considerable extent the provisions of the Artizans and Labourers' Dwellings Act, in order to get property of a very bad character destroyed altogether, and other property improved. That is one of the duties that they have attempted. What perhaps is pressing upon the officer of health at the present time more than any other is dealing with privies and ashpits with a view to improving and getting rid as far as possible of the objections which may perhaps be necessarily incidental more or less to that system. Perhaps I may be allowed to say that we do not allege that privies and ashpits are unobjectionable, but we do say, and that is what we have always said and continued to say, that until a mode of disposing of and dealing with sewage has been in some way satisfactorily determined, we say, keep out of your sewers as much as possible the fœcal matter which in itself renders them polluted.

2428. Then his duties are not so much those of an inspector as of adviser to the board?—But necessarily involving a very large amount of inspection, because he never brings before the health committee any case except where he has himself inspected, and he is always able to report upon the extent and kind of interference which he thinks desirable; so that his time is occupied to a very large extent in inspection, in fact I may say mainly so.

2429. Is he responsible for making analyses of any kind for you?—He is quite competent and would do so, no doubt, and I believe it is understood that that to the extent which may be necessary is part of his duty. He has a laboratory, I believe, with all the necessary requirements belonging to the corporation, and is quite able to do any duties of that kind which may at any time be assigned to him, and for many years Mr. Leigh has been the consulting chemist of the gas committee.

2430. Are we to understand that the corporation provides him with a laboratory?—Yes, and the Council would provide him with anything which he might think or say was necessary, but I believe he has got it already, being required in connexion with the duties which he has long performed for the gas committee.

2431. The corporation or the local board, I presume, would consult him as to placing anything in that laboratory which they thought desirable?—No doubt.

2432. Does he make health returns for you?—Yes, every fortnight at every meeting of the health committee he makes a return of the deaths which have taken place in all the different districts of the city, that is to say, the districts as they are divided for the purpose of those returns by the Registrar General.

2433. Are those returns returns of sickness as well as of deaths?—No; he does not, I think, make any return of the amount of sickness, nor am I aware that he has attempted in any way to obtain such returns. There is no doubt about it that there would be very considerable difficulty in obtaining them at all. There is a certain amount of jealousy, and there would be a certain amount of objection on the part of medical gentlemen to make those returns, because it is difficult to say where they were to begin and where they were to end. Mr. Leigh has made application, and I believe they have carried it out to a large extent, to medical officers of boards of guardians and to others to inform him when cases of fever or any other dangerous disorder arise, in order that he might inspect the property and take all the steps necessary for disinfection or the removal of the patient, or anything else that might appear to be desirable. They give him that information, but I do not think that beyond that he has attempted to get any returns of sickness.

2434. But he is in constant relation with the poor law medical officers, is he not?—Yes, he gets information from them constantly.

2435. So that he really knows if there are any places infected with disease?—Yes, and he reports to the committee. He takes his own steps, and he has a sort of general authority to do with reference to disinfection what he may think necessary, but to that extent he gets information.

2436. Is your town divided into districts for the purposes of nursing?—I do not think so. I am not aware of it. There was one only attempt, but I do not think it lived long.

2437. It was attempted, was it not, to divide the city into sanitary districts for that purpose?—Yes, but I believe it has not been carried out.

2438. Is that done in Liverpool, do you know?—I think not.

2439. Did I understand you that the town was divided into districts for any purposes?—Yes, of course it is divided in many ways. We have our wards, for instance, for municipal purposes; we have our townships which I have already referred to; but I believe that the health districts, that is to say, for the pupose of returns to the Registrar General, do not correspond either with the wards or with the townships. These are districts which the Registrar General or those under him have themselves arranged, and which possibly might be improved. I think our officer of health has had some correspondence with the Registrar General upon the subject.

2440. Are those districts not conterminous with those of the Poor Law Board?—No, not conterminous with the districts of the Poor Law Board, for the township of Manchester is a union of itself. Cheetham is in the union of Prestwich. Chorlton, Hulme, and Ardwick are in the union of Chorlton-upon-Medlock, and I do not know in what union Beswick is.

2441. When you referred to the Acts just now did you include the Salford Sanitary Acts?—No; Salford is a distinct corporation on the other side of the river; but so far as regards the general carrying out of the law, Salford is very much in the same condition as Manchester. I do not think that there is any authority in Salford excepting the council.

2442. Is not your hospital at Chorlton under the control of the Poor Law Board?—Yes, entirely; that is an hospital in connexion with the Chorlton-upon-Medlock union.

2443. That is one virtually of your fever hospitals, is it not?—I believe it is, but the Chorlton hospital is really three or four miles out of Manchester; it has

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been felt that that distance is somewhat inconvenient, but still it is used as a fever hospital, I believe.

2444. The object of some of these questions is to ascertain from you the relation between your council as a sanitary authority and the Poor Law Board as a sanitary authority; is there any communication between the two authorities?—As far as regards the Poor Law Board, we really have no connexion with them in any way whatever, nor have they as far as I am aware any power whatever to interfere with us. The guardians alone are in communication with the Poor Law Board, and what may be the extent of their powers I am not exactly prepared to say, but practically as far as I know there is very rarely if ever any interference on the part of the poor law authorities within the city of Manchester.

2445. You referred to the Diseases Prevention Act; in case that is put in operation by the Privy Council what happens?—That I presume would have to be as I have already suggested carried out by the guardians, especially as that power is given to the guardians and it is not given to any other authority. With reference to a great number of other powers of which we have been speaking, the local authority is various, and in fact the corporation may very often interfere, and I daresay the guardians also in many cases might, if the necessity arose, interfere also, with regard to nuisances; but whatever their powers may be, practically they are not in any way exercised, or very rarely indeed. I am scarcely aware of a case within the city of Manchester. The guardians leave to the corporation the carrying out of all such provisions except as regards the Diseases Prevention Act, and if circumstances required some extraordinary steps to be taken, then I presume the guardians, and the guardians only, would be able to interfere.

2446. The guardians only would be able to carry out the provisions of the Diseases Prevention Act?—I believe so.

2447. But notwithstanding that, if the guardians were in case of cholera epidemic to take charge of the population, as morally and virtually they are bound to do, it is doubtful whether they would not have their accounts stopped by the Poor Law Board?—I fancy so unless they had got consent, and I do not know to what extent the Poor Law Board could give them that consent. In the case of the Diseases Prevention Act the Privy Council must issue an order, and unless the Privy Council issued an order the guardians would be liable to be surcharged; and in the case that I referred to, although the guardians only did what they felt was absolutely necessary, they said they would run all risks of being surcharged, and they made arrangements to the extent that appeared desirable for the supply of medicine; and they did so though we did not succeed in getting the order of the Privy Council.

2448. But you are the sewer authority, are you not?—Yes, we are, but we have our own powers, so that I have hardly ever had to refer to what the special powers given by the Sewers Act may be.

2449. Then under the Sanitary Act you have power either to provide hospitals or to make use of any existing hospitals for whatever purposes you think fit?—I rather think that that power does exist, but I think it is only temporary. That Act certainly gives the power, but hitherto I have had no occasion to refer to what those powers would be. We have never attempted in any way to exercise them or carry them out.

2450. With reference to your middens or ashpits, do you happen to know what is the experience of Stockport?—I really do not.

2451. I suppose that the Lancashire towns generally were managed in the same way as Manchester in that respect?—I believe nearly all except some newly created towns where they thought they were to begin in a state of perfection, and they find that they have turned trout streams into very disagreeable polluted streams; or else, generally speaking, in all the old towns in our neighbourhood I think it will be found, as in Manchester, that privies and ashpits are the rule, and waterclosets the exception. Perhaps I might be allowed to interject one observation, for it is rather an important one. In Manchester, under our Act of 1844, a privy and ashpit in such a situation as satisfies the corporation is required to every house. The corporation have required the existence of a yard behind each house in which the privy and ashpit will be placed. The consequence of that legislation has been that in Manchester, since 1844, the building of back to back houses, which is one of the most crying nuisances that can be imagined, has been illegal. The clauses of the Act have necessitated behind each house a yard, and then between the yards of those cottages and the cottages bordering into the other street there is necessarily a passage, so that the nuisances created by and the evils arising from back to back houses and cottages being erected have not been allowed to exist in Manchester since 1844.

2452. May we gather this from your evidence as well as from other circumstances, that it is your opinion that that system would be wholly inoperative unless you had a complete system of inspection?—It involves certainly a certain amount of inspection necessarily; and it certainly would be desirable that in places such as Manchester the duties should be imposed upon the local authorities of emptying those places, and keeping them as far as emptying is concerned in a satisfactory condition.

2453. Your system of inspection is that of taking upon the local authority the responsibility off the shoulders of the landlord or occupier?—Yes, as far as the emptying of privies and ashpits is concerned.

2454. Then the local authority are responsible for any fault or nuisance of that kind which we might find in the town?—Yes, any nuisance arising from the non-emptying of privies; because I must guard myself against becoming responsible for the filth which is to be met with, because I believe in many districts it is found by experience to be the fact, that if you emptied and washed the privies every 24 hours, they would be unfit for anybody to enter in less than half that time afterwards. You cannot alter the character of the people, they seem in some districts as though they preferred to make foul and disgusting that which is before them, rather than to take the trouble to do that which is intended and suggested by the arrangement which is carried out.

2455. Is there any resistance to inspection?—No resistance whatever. So far from there being any resistance they are rather anxious to encourage it, and very thankful for the inspection which is carried out.

2456. (*Mr. Bircham.*) You propose to us one code for town and country, and you repudiate the idea of any inspection over bodies that are under the Local Government Act; would you leave the country authority without anything between them and the central authority?—Yes, I would, certainly. I think the same reasons that would justify a town in objecting to the right of the local magistrates to interfere would justify the country districts.

2457. Have you had any experience as to the necessity for bringing pressure to bear upon boards of guardians in rural districts to bring about the performance of their duty?—No, I have had no experience whatever, but I can very well understand that it would be an advantage, and I think I should be giving very unsatisfactory evidence if I did not add that in my opinion there ought to be vested in some authority, the right to interfere wherever boards of guardians or the local authorities are neglecting their duty.

2458. Would you prefer, instead of such action as the Secretary of State is empowered to take under the 49th section of the Act of 1866, that he should only have power to inflict a penalty?—No, I would not withdraw any powers that have been given to the Secretary of State by the 49th clause, but I would give additional powers such as I have explained, so as to do away with the necessity, except some most extra-

ordinary case occurred, which I can hardly believe ever would happen, of his undertaking upon his officer's responsibility the carrying out of works.

2459. There might be a difficulty, might there not, in levying a penalty upon a district formed for health and nuisance purposes?—It is possible, but I do not imagine that there would be any difficulty in practice. In every Act of Parliament there are constantly enacted penalties to be imposed in case of neglect of duty. I suppose there is such a thing as sequestration, but in fact I believe that the powers if they were given would very rarely have to be exercised, except to a certain extent.

2460. You have expressed an opinion that there might be the same code in country and in town districts, and it seems proper and necessary that in towns the houses should have a right of communication with the sewers without exception, but would not it be found in rural districts very desirable that the local authority should have the power of making drains for the escape of pure water with which no sewage should communicate?—It is quite possible, but I can hardly imagine that any district could be satisfactorily supplied with water that had to be conveyed in that way.

2461. In rural districts it would not infrequently be desirable to drain off water as detrimental to health, to lower the water table,—and in towns you give a universal right to buildings to connect with the sewers for their sewerage, and you would suggest one law for the town and country; would not it be desirable that in the country districts there should be power to have a water drainage with which no sewerage should interfere?—I think it might very possibly be desirable, but I do not anticipate that that would create any difficulty. I am not aware that power is absolutely given in towns to any house to communicate with the sewers without the consent of the local authority. A street is sewered and paved under the ordinary powers at the expense of the owners of the land on each side of the street, and then it is quite clear that the owners or the occupiers of all the houses must necessarily have a right to drain into the sewer. It has been made for their benefit, and they have paid for it; but where it is a public sewer made at the expense of the inhabitants of the township, then, in Manchester at any rate, the right of the tenants does not arise. They can only drain into such sewer with the consent of the authorities. If I understand the question it is assuming that there would be a duplicate system of sewering necessary. You would require to have a sewer for the purpose of carrying away the ordinary drainage of the houses, and you would require another set of sewers for the purpose of conveying pure water for some purpose or other which I cannot quite understand.

2462. Although in rural districts it might not be generally necessary to construct sewers, might it not in many such cases be desirable to get rid of surplus water by pure water drains?—I have no experience at all of that.

2463. With regard to new buildings, could you expect to put the country under the same law, or would it be necessary to put it under the same law as towns?—No, certainly not, and there you see the case which I put is clearly and distinctly met. The local authority would have full power to make byelaws, but it is scarcely possible to suppose that the local authority or the guardians in every rural district could make byelaws to regulate buildings which may become by change of circumstances very necessary. The power should exist, but it would lie dormant until the necessity arose. I certainly would not by legislation make the laws regarding private buildings apply to rural as well as town districts; certainly not.

2464. But would you not propose that there should be legislation applicable to the country, so as to have the houses built properly for human habitation, and to suppress those that are not?—Yes, certainly, whether there is one or a thousand houses I think the necessity for some legislation would arise.

2465. (*Mr. Richards.*) Do you wish the Commission to understand that in rural districts you would have the plans approved by the authority before the house is commenced?—No, I do not think it would be necessary to go to that extent. I do not think there would be any hardship, and if there were there would be the power which could be enforced if it were required; but then, again, it would not be enforced unless you made byelaws. I do not assume that byelaws would be made except in districts where the necessity of applying those regulations would arise.

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2466. With respect to the 49th section of the Act of 1866, would you have the Commission to understand that the Secretary of State should first approve of a plan before he called compulsorily upon the authorities to carry out any work?—Certainly.

2466*a*. Then the operation would be this: complaint would be made to the Secretary of State, and he would send an officer to see what works were necessary, and have proper plans prepared?—Yes, the operation would be pretty much as you say, but I assume that in all cases the Secretary of State, when there is complaint, would communicate with the local authority, and they would have the opportunity of stating their case, and if they say that they will do nothing to meet the objection, then the Secretary of State would send down his inspector. This inspector would also have an opportunity of seeing the local authority, and would have to determine what really was necessary, and what he could recommend to the Secretary of State as necessary to get rid of the objection of which complaint had been made. Then if the local authority really will not do its duty and will not consent to anything, the order which would be made by the Secretary of State would be binding upon them, and they would be subject to penalties if they did not carry it out. It would be their fault if it was an unsatisfactory plan, because they would have an opportunity which they neglect to take of arranging with the Secretary of State himself or his officer what plan they would prefer; but it would be necessary that there should be a plan put before the local authority.

2467. You consider that that would be a preferable plan to the Secretary of State ordering the works to be carried out?—Yes, certainly. I conceive that the latter course would be attended with enormous difficulty, and certainly it was not contemplated by those who had something to do with that clause.

2468. Is every part of Manchester now sewered upon any principle?—It is sewered upon a principle and we believe we are about the best sewered town in England. I do not believe that there is a street or court in which there is not a most thoroughly effective system of sewering and draining. I believe that that is generally admitted throughout the whole town. You may go into the narrowest and most confined and worst courts and passages, but you will find that there is a complete system of sewering. Where the sewerage goes to is quite another question.

2469. Assuming that Manchester was not in the difficulty of polluting the river by the discharge of its fœcal matter, would you then be of opinion that the present privy and ashpit system is the proper one to maintain?—I should certainly. I think it is preferable in the small houses to any attempt to introduce waterclosets, even if the question of fouling the river did not arise. I do not myself believe that it is at all likely that satisfactory arrangements for waterclosets will ever be made. But in connexion with that I may be allowed to make this statement. One of the greatest difficulties in connexion with the watercloset system is, where are you to get the water from. We have expended in Manchester as I have said nearly two millions. It is quite certain that taking Glasgow, Edinburgh, Dublin, and many other places, and taking the very lowest consumption of water where waterclosets are the rule, our waterworks would be totally insufficient for the supply of water that would be required for Manchester.

2470. You have given us the assessable value of Manchester and the amount of rates. Can you give

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us the rate per head of the population for the purposes already stated in your evidence?—The Township and Highway Rates, as already given in answer to a previous question (2363), would amount to the following sum per head, on the estimated population, viz.:—

Township.	Rates.			Estimated Population.	Amount per head.		
1.	2.			3.	4.		
	£	s.	d.		£	s.	d.
Manchester -	44,909	0	0	203,011	0	4	5
Chorlton - -	10,045	0	0	49,044	0	4	$1\frac{1}{10}$
Hulme - -	9,511	0	0	74,952	0	2	$6\frac{7}{10}$
Ardwick - -	4,431	0	0	23,810	0	3	$8\frac{6}{10}$
Cheetham -	6,090	0	0	19,042	0	6	$4\frac{7}{10}$
Beswick - -	515	0	0	964	0	10	$8\frac{2}{10}$

or if you take the whole amount of such township and highway rates, (75,501*l.*), and the whole population, (370,823), it is equal to about *four shillings* per head. If to the township and highway rates you add the water rates, (40,350*l.*), and the city rate, (109,000*l.*), the rates levied would amount to *twelve shillings and one penny* per head, upon the population of the city.

2471. You have spoken of the advantages of the water supply and the gas being in the hands of the local authorities instead of those of a company. Do I understand you to intimate your opinion that the Commission should recommend any further powers being given than at present exist for obtaining such works by the local authorities?—I think it is desirable to give facilities to the local authorities to obtain waterworks, and also to construct them where they do not exist. I do not think the powers do exist, but the recommendation was made by the Health of Towns Commission, I think in 1846, that gas and water should be in the hands of the local authority, and that every facility should be given for obtaining the necessary powers.

2472. Have difficulties in obtaining money for carrying out sanitary works arisen within your experience in other places besides Manchester?—I frequently hear that that is one of the greatest difficulties which local boards have to contend with, and certainly one of the causes which make them very unwilling to undertake works involving much expenditure. It is from what I have heard and what I know that I have expressed the opinion that increased facilities in that respect would very much assist them.

2473. Might it not be considered a hardship that the Secretary of State should have the power of inflicting a penalty upon a district for not carrying out works for which it was not in a position to obtain the money?—I do not believe that any district would be absolutely unable to borrow money, but I think it would be a very strong ground for an application to the Government to find the money, that is to say, through the Loan Commissioners, where that was the only difficulty in the way of the local authority carrying out the order of the Secretary of State. I do not believe that the Secretary of State would often interfere to the extent that might be apprehended, if it was shown that there was a willingness on the part of the local authorities to do what he suggested, and that the only difficulty was where the money was to be obtained.

2474. I understand it to be your opinion that sanitary works would be much more readily undertaken and gone into *con amore* by the local authorities if they saw the end with respect to money?—I have no doubt that that would be a very great inducement, and that they would be much more willingly undertaken when they saw that they could borrow the money at a reasonable rate of interest, and limit the expenditure per annum to the amount which would be required to repay it, say in 30 or 40 years.

2475. With respect to waterworks, do you think 30 or 40 years would be a sufficiently long time for repayment?—No; I think as far as regards waterworks, and many other works of a similar character, for instance, all works connected with sewerage, which are for the benefit of the whole district, the longer the time that can be given for the repayment of the money the better. I think it would only be fair and just to extend it over 100 years, but at the same time you cannot expect to get power to borrow money for that length of period. The power to lend the money would be limited to a certain moderate period. You could not expect the Government to lend money for 100 years, or 60 years, or 50 years, and probably they would not go beyond 30 years, but there might be power given to the local authority to reborrow, either from the Government or in any other way, provided that they repaid absolutely the amount of debt incurred at a rate which would destroy the debt within any period that might be fixed; a 100 years has been given I believe in some cases, and in some instances where the case has been very strong I do know that it has not been forced upon the authorities (it was not in the case of Manchester) to have a sinking fund for many years in reference to their waterworks expenditure.

2476. Do you think with respect to gravitation schemes of waterworks that there should be repayment at all?—I do not think it would be any very great hardship if repayment was not provided for, but I doubt whether it would ever be allowed by Parliament; I do not think that it would be unjust. I think that where they are works of a continuous character and for the benefit of a district, there would be (however long the delay fixed for the repayment of the money) a certain amount of injustice in making the ratepayers during that period pay the expense of works which would give an advantage to the ratepayers beyond without any charge whatever; but I do not think that it is likely to be sanctioned that debts are to be created without any provision for their ultimate liquidation.

2477. With respect to the Diseases Prevention Act, do you think that it would be desirable to intrust the Secretary of State, or some Government officer, with the power of extending the advantages of the Diseases Prevention Act, without the necessity of advertisement in the London Gazette?—Most decidedly. I think that this arrangement of advertising is like publishing that a place is subject to something like a plague. I think that the power should be given without any difficulty whatever, if sanctioned by the Secretary of State, and the less publicity given to it the better.

2478. (*Mr. Shaw.*) Upon that point you agree with the policy of clause 10 of the Sanitary Act Amendment of 1868, to which we drew Mr. Simon's attention the other day, which is to this effect: "The sewer "authority, or in the metropolis the nuisance authority, "shall have the like power to make provision for the "temporary supply of medicine and medical assistance "for the poorer inhabitants as it now has to provide "hospitals," and so on; or "but such power to make "provision for the temporary supply of medicine and "medical assistance shall not be exercised without "the sanction of Her Majesty's Privy Council?"—I would strike out the latter part, which I think is an objectionable part; it does not much matter if you are not obliged to go through the formalities fixed by the Prevention Act; then I see no objection to it whether it is the Privy Council or the Secretary of State.

2479. That is a principle which you would wish to see extended?—Yes, certainly.

2480. Would not that mee tthe difficulty which Dr. Acland asked you about; if there was an epidemic raging, the powers of the Diseases Prevention Act would be in existence, and all expenses would be recoverable as a matter of course if laid out by the guardians under the authority of the Privy Council; and if the epidemic was not raging within the meaning of the Diseases Prevention Act, still if there was a great degree of sickness you might empower the sewer authority to give medical assistance, and they would

be protected as to the expenses under this Act?—Yes.

2481. One way or the other the thing would be done, and the authority would be protected as to the expense?—Yes, I think so; I think that the guardians who really are the local authority should have the power to give medicine in such cases as are suggested, without going through the formality of obtaining the sanction of the Privy Council, and it seems to belong to them to find the money for such a purpose, because they are the sewer authority. No doubt the corporation both could and would do it, and in the case that I referred to they said the medicine must be provided, the guardians ought to provide it; but if they have any difficulty the medicine must be provided, and we must find the money if necessary.

2482. That power was given to the sewer authority because by the previous Act the sewer authority had the power of providing temporary hospitals, and it was thought proper to keep it in one hand; perhaps you would rather prefer that the power should be in the hands of the guardians?—Yes, I think that they do provide hospitals now to a certain extent, and I think it better that they should provide them to any extent that may be required.

2483. Have you ever had your attention directed at all, in connexion with the case of sewerage, to the injurious character of sewer gases escaping into the streets?—That question has arisen in this way: it is constantly the subject of discussion as to what arrangements are to be made for ventilating the drains of houses, and then for ventilating the sewers. I have always said, and the committee have taken my view of the case, that as far as regards the ventilation of the drains of houses, that is an expense which ought to be incurred by the owners of the houses; and that as far as regards the ventilation of the public sewers, in whatever way it might be thought to be desirable, that is an expense which properly belongs to the township, and ought to be paid out of the general sewering expenses. But by our original Act of 1844 the corporation are authorized to require a pipe to carry off the effluvia in such a way and in such a direction as they shall require; and I believe that the practice is to have a pipe in the yard in connexion with the privy and ashpit, communicating with the drains, and carried at any rate above the roofs of the houses, that is for the purpose of ventilating the drains of the houses. As far as regards the drainage of the sewers, I do not think that any very satisfactory steps have yet been taken in Manchester. That is one of the subjects which Mr. Leigh is specially inquiring into, and what he will ultimately advise should be done I am scarcely prepared to say.

2484. In short it is a question under consideration?—Yes, it is a question under consideration, but it is felt to be a very important question.

2485. As regards the 49th section, you contemplate the case where the nuisance authority refuses to do its duty?—Yes.

2486. That duty may possibly be one that it has not the power of doing itself, but something which it must enforce upon the householder by summoning him before a magistrate?—That may be.

2487. Does not it seem a little complicated for the Secretary of State to sue for penalties against the local board because that local board had not sued for penalties against somebody else?—I do not think that that case would very often arise; it does appear a little inconsistent, but at the same time it is very difficult to provide for every possible case that may arise. Supposing it is a nuisance arising upon the premises of some other party, and your local authority decline to summon, because perhaps they say, we do not think it is a nuisance with which we should interfere, I cannot imagine that the Secretary of State would ever put this power in motion in a case of that kind, because it is left to the individual who is annoyed by that nuisance to summon the party himself before the magistrates and get an order, and in any of those cases the Secretary of State would never exercise his authority; it would be like using one of Nasmyth's hammers to break an egg. He would leave it to the individual aggrieved. If it were a public nuisance, that could only be dealt with by the local authority; that would of course be a proper matter for the Secretary of State's interference.

2488. Supposing you had a whole street in which animals were kept—pigs for instance—producing an effluvium which is very injurious to health, or all the privies were in a bad state, the only remedy under the Nuisance Removal Act would be to summon the parties?—As I understand the clauses that have been already referred to, in cases of that kind the nuisance authority, or anybody aggrieved by the particular nuisance in question, could summon the party before the magistrates. Take the case that you suppose, of pigs being kept in a house, surely the man in the house adjoining would be able to summon him; but if you assume that they are pigs kept in connexion with every house in the street, and that therefore there is no particular individual annoyed by the pigs, then it might be left entirely in the hands of the local authority to interfere; but I can hardly imagine such a case to arise. I think that in the case of nuisances such as you have described, where they are nuisances arising from a foul privy and ashpit, or where they are nuisances arising from the keeping of pigs, they would be to a certain extent rather a private nuisance than a public nuisance; they would be nuisances to the people in the immediate locality affected; and in that case any individual aggrieved could, as I have understood the clauses that have been referred to, summon the party who either had a foul privy or had a foul pigsty before the magistrates, if the local authority neglected to do so.

2489. Supposing that you had a whole street or a whole town full of filthy privies, which is one of the main objects which the nuisance authority is set up to correct, and that the inhabitants are so lethargic that they might have the cholera amongst them, and you could not trust to their sense of what is wrong to act in the matter?—If a whole district is in that state of course it becomes a much more difficult and more important matter, but in that case I am satisfied that the machinery which I have suggested would secure something being done by the local authority more effectively than any other machinery that has been proposed. Of course when you speak of a whole street or a whole district being in that state, it clearly becomes a public nuisance with which the local authority would be bound to interfere, and even in that case, I think that the power which it is suggested in addition to what he now possesses should be given to the Secretary of State would be found to be effective, and there would be this advantage in summoning the parties before the magistrates, that there would always be in every district some intelligent inhabitants who would wish to see the local authority exercising its powers and would support them in carrying them out. I cannot conceive of anything which in my opinion would work more advantageously than, if the local authority was absolutely contumacious (if such a case can be supposed), summoning them before the magistrates, because in such a case the inhabitants of the district would have an opportunity of seeing how unreasonably those who professed to be their representatives were acting. I think that public opinion would be brought to bear both in support of the Secretary of State's interference and also to coerce the local authority to get rid of the liability to penalties.

2490. Would it be preferable for the Secretary of State to summon the local authority for not summoning or at once have the power of summoning the offending party?—I think that is a matter which really does not involve any very serious principle. I do not see any objection to it except that it would be imposing upon the Secretary of State or his officers a duty which would call upon them actually to interfere in districts where I think you might directly compel the work to be done by the authorities themselves.

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2491. Are you aware that under the Metropolis Acts an improvement of the very nature that you suggest has been carried out, that is to say, under the first Metropolis Local Management Act, the vestry, if a party did not drain his house sufficiently and would not obey their precept, would have the power to go in and do it, but that was found so very inconvenient that in the amended Act the option was given of suing for a penalty if the thing is not done?—It is the course which we have taken in all our local legislation. We very often have to come to Parliament to get improved powers. We have power to execute works of almost every sort, but we always have power in addition to impose a continuing penalty upon the owner if he does not do his duty, and we never think of doing the works. I do not suppose that the Secretary of State would ever have, through his officers, to do the work, even if he had the necessary power to interfere.

2492. As regards water supply, do you advocate the laying of it on to every house, or in the poorer districts would you lay it on in the middle of a court with a stand pipe to which everybody should have access?—We object to stand pipes and we are doing everything we can to get rid of them, although there are at the present moment a very considerable number, they have been reduced very largely, and we are so convinced of the desirability of having the water laid on into the premises rather than supplied by means of stand pipes that I think one of the last resolutions of the waterworks committee was to take upon themselves, which does not belong to them by law, the expense of carrying the water into the house, where they have removed the stand pipe in the court, and we have never heard it suggested that it led to dampness or anything of the kind. It must be seen that it is an infinite convenience, and we do not think that it would lead to any additional consumption of water, because the expense is very great to keep the stand pipes in order. They are constantly left running, and you require constant inspection; and we believe that the consumption and waste of water by means of stand pipes is far greater than the waste and consumption of water which would arise from anybody in cottages having nothing to do but to turn the tap instead of having to go out, perhaps in the cold and snow, to the stand pipe to wait, with perhaps their neighbours waiting also, to get water there.

2493. (*Mr. Powell.*) You were asked certain questions respecting what could be done in the event of the nuisance authority doing nothing. When you answered those questions had you in your mind the 16th section of the Sanitary Act of 1866 which runs thus, "In any place within the jurisdiction of a "nuisance authority the chief officer of police within "that place, by and under the directions of one of "Her Majesty's Principal Secretaries of State, on "its being proved to his satisfaction that the nuisance "authority has made default in doing its duty, "may institute any proceeding which the nuisance "authority of such place might institute with respect "to the removal of nuisances;" does that appear to you to be a sufficient provision in case of inaction on the part of the local authorities?—It appears to me to be quite ample. As to the chief officer of police, I suppose that would be the chief officer of police in every place, either a county or borough.

2494. You have pressing upon the boundaries of Manchester a considerable urban population divided into districts each under its own authority?—Yes.

2495. Do you find any desire, either on the part of those districts to be comprehended within Manchester or on the part of Manchester to comprehend any or all of those districts for sanitary purposes?—There has been a desire on the part of some, but certainly there has been no anxiety shown on the part of the corporation to include them, and there have been no serious or very decided steps taken by any outlying district to get included within the limits of the corporation.

2496. I presume that in the case of Manchester, as in other cases of the same kind, the rates in the outlying district are less than the rates of the central district, and consequently there might be some indisposition from a fear of the increased pressure of rating?—I think that that is very likely indeed. Where there is nothing done no expense is incurred. There is no doubt that the difficulty of introducing those provisions generally would be the dread on the part of the district of the increased rates which must necessarily follow.

2497. Can you explain how the Acts in force in Manchester stand with regard to that most delicate and difficult point, the power of entry upon private property by the officers of the local authority?—I really cannot give any very precise answer to that question beyond this: We certainly have no absolute power of entry in any case, and I do not think it is right that we should have. We have always to apply to the justices, showing the necessity for it, in order to obtain the necessary authority. I consider that it would be most objectionable to give to any local authority or their officers, because it must be borne in mind by whom the power is carried out, any absolute right of entry when refused upon private premises.

2498. Would you allow a private individual to make such a representation to the justices as might authorize the local authority to enter in case the private individual supposed that there was some mischief on some private premises?—I do not quite understand how a private individual could be placed in that condition. If it were suggested and shown to the local authority, and there did appear to be a necessity for entering premises, of course, if refused, they would have to satisfy the magistrates that there was a sufficient case, when the evidence of any private individual might be given, but I do not see exactly how a private individual could in any way have to apply for the officer of the local authorities to enter private property.

2499. A private individual may obtain a summons, may he not?—Yes.

2500. Why should not a private individual go to the local authority and say, "You have not properly "exercised your power, and you are neglecting it at "your own peril"?—If a private individual brought a party before the magistrates, then the magistrates would have the same power, whether for entry or anything else, that they would have if the proceeding had been initiated by the local authorities.

2501. Speaking generally, and avoiding any technicalities, could you explain to the Commission what powers you have in Manchester which are given by your local Acts, and which are not conferred by the general Act?—I might say that there are certain provisions upon many subjects, especially in connexion with preventing the waste of water, and a variety of other subjects, where we have, I believe, some provisions which are not in any public general Acts.

2502. But it would not be inaccurate to say that those differences in favour of the authorities rather relate to matters of detail than to large matters of broad principle?—Certainly, as far as regards matters of broad principle, I believe the clauses practically are the same.

2503. Comparing the powers under the general Act, 1848, section 64, respecting offensive trades with the bill which you have before Parliament, there is a broad difference, is there not?—There is.

2504. Will you explain that difference?—When the bill was before Lord Redesdale he said, and very naturally too, "You do not mean to say that the local "authority is to authorize a trade which is a nuisance "to be established in its district." I could only say that we had taken the clause as it appeared in the public Act. His lordship said, "Strike out those "words." I said, "As far as we are concerned we "think they are better out than in. It is a discretion "given to the local board which certainly may lead to "considerable inconvenience," and he said, "Strike "them out," and we therefore have the clause in that bill, but with the omission of those words "without

"the consent of the local board." It is absolutely prohibitory to establish a trade which would be a nuisance within the city.

2505. Is the term "nuisance" employed, or "offensive trade"?—"Offensive trade" are the words; it is in our bill the same, "or other noxious or offensive "trades shall not be established," and the same words are used, with the single exception that the words "without the consent of the local board" are omitted.

2506. Have you in your mind any mode by which the action of the local authority could be quickened, supposing there was some neglect of duty on the part of that authority. The neglect which occurs to my mind is one of which I have had some experience, where the local authority has not performed its office of removing nightsoil?—I really have not considered that. Perhaps one reason is that the duty is imposed upon the corporation of Manchester, and I always assumed that it would be efficiently carried out. I have not had to consider what steps would be required, and I have not considered the question.

2507. You are probably aware that the suggestion of the employment of one officer only to collect the different rates emanated from Mr. Ayrton's committee last year?—I believe that some such suggestion was made by that committee.

2508. And it was part of the suggestion, was it not, that in the event of loss by arrears or ultimate deficiencies, that loss should be borne rateably between the different rates?—I am not aware at all of the nature of the provisions.

2509. But do you think there would be any difficulty arising from the fact that you would have the same collector serving different masters?—That would not practically be the case as far as the local rates are concerned, because the only masters that would be engaged in the matter would be the overseers, and their collectors would collect in the shape of poor rates that which would really include all the other rates. The practice is now, with the overseers of Manchester, to state on the back of their notices how much of the rate is required for the purposes of the city, how much is required for the purposes of the guardians, and how much is required for general purposes; and they would add to that what was required for highway rate and what was required for the township rate.

2510. Has not the health authority at present the power beyond their district to make drains for the outfall and distribution of sewage?—I believe that is given by the general law.

2511. We will suppose that two districts lying close together, and each independently making its own drains for the outfall and distribution of sewage, does it not appear to you to be far more convenient that those two districts should unite for the purposes of the outfall and distribution of sewage?—It appears to me not only more convenient, but that it will become absolutely necessary.

2512. If that be the case with respect to two towns lying near together, whose drains for the purposes I have mentioned would be probably parallel, is it not likewise equally necessary that the towns above should unite with the two towns below for the construction of such a drain as would be necessary for the joint use of all the district?—I have no doubt that that is so, and that it would be absolutely necessary that the whole drainage area should unite and be taxed in some way for the payment of any works of that character that might be required for the whole district, beginning with the very source, and going to the very end.

2513. In Lancashire is it not the fact that owing to the deficiency in volume of the streams, there is not sufficient flow of water to carry off the sewage matter?—I do not know whether I can say exactly yes or no to that question. There is no doubt that at times our streams go down very low in the summer, and they are certainly not in a very satisfactory condition; they are dependent very much, perhaps entirely, upon the scouring or cleansing which, to a certain extent, is secured by the operation of floods.

2514. Would it be possible to discharge the sewage of Manchester into the Irwell during the summer?—A portion of the sewage is now discharged into the Irwell, but the main outfalls are into the Medlock, and such river is bad enough as it is, but if the privies and ashpits had been turned into waterclosets, and the sewerage turned into it, such river would have become intolerable.

2515. That being the case is not this the result, that there is a question of very great difficulty affecting the discharge of the sewage of those great communities, entirely distinct from and independent of the question of keeping such small rivers as you have pure?—There is no doubt about it that that is a very difficult question, and as far as our particular district is concerned, it is intimately connected with the nature of the powers which will have to be given to local authorities, if they are to deal effectively with sanitary subjects. I believe that the construction of an outfall from Manchester to sea would cost 1,000,000*l.* sterling.

2516. If there were to be a drain of the character that I have suggested erected in common by the different localities, of course the rate for the construction of it and the management generally ought to be vested in some joint authority?—Necessarily, I think, in a board that would represent the whole area that would be subject to a taxation.

2517. With regard to the Artizans and Labouring Classes Dwellings Act, the town clerk of Liverpool stated that there might be a technical difficulty, of which he had some apprehension, under the fifth section, under which representation is to be made to the local authority where any premises are in a condition or state dangerous to health so as to be unfit for human habitation, and he said that each individual set of premises might not be dangerous, but that the crowding together of a great many might be dangerous, and that an objection might be taken if steps were initiated, on the ground that there was no scope for action for the reason that I have stated?—I do not anticipate that much difficulty would be found. In most cases the whole of the cottages would in all probability be declared to be unfit for human habitation because of either the want of ventilation or the want of proper arrangements, but I do not myself think that any practical difficulty would arise from any such objection as was suggested by the town clerk of Liverpool.

2518. In your own case you have put the Act in force and have found no difficulty?—I must not be understood to say that we have done much beyond beginning. There are certain steps, and it involves a lengthened period of time before you get to a conclusion. We have not yet discovered that there is any practical difficulty in the way of working the Act, and I do not myself think that there is.

2519. The astute minds of those who are so ready to find out a defect in all legislation affecting them, has not yet discovered it?—We have not yet heard of it.

2520. (*Mr. Cave.*) I do not quite understand what the duties of your medical inspector are?—We have no medical inspector exactly, but we have an officer of health who does happen to be a medical man.

2521. Should you consider that it was necessary that the officer of health should always be a medical man?—No, I do not think so. Of course I express that opinion with very great diffidence, but I think there are a very great many questions in towns which seriously affect health, and which probably would be even better understood by a gentleman who was not a medical man. I do not think it is at all necessary that he should be a medical man.

2522. What class of cases are those to which you allude?—I think it does not require a medical man to see, when he goes to inspect property in close and confined courts and passages, where he meets with a want of ventilation, and a want of proper conveniences, and a vast variety of other circumstances connected with the property, that there ought to be a change in order to

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improve the sanitary condition of the property itself, and of that district.

2523. Does your officer of health attend to give evidence in court of the cause of death?—No, not necessarily; he attends to give evidence sometimes in cases where parties are summoned for offences of a nuisance character, and in cases in which his opinion is thought to be likely to be valuable he attends, but not in cases of death where there happened to be an inquest, except he should happen to have attended upon the unfortunate person who has come by his death.

2524. Has he any staff under him?—Yes, he has a surveyor and clerks of course; but we have only had an officer of health I think about 12 months, or something like that.

2525. What would be your opinion of the advantage of having a first-class medical man as an officer of health, with all those inspectors under him whom you have mentioned in the course of your evidence?—I do not think it would be at all desirable to alter the mode of action which we have adopted in Manchester. The officer of health to a certain extent is an independent officer, and has a perfect right to express any opinion he thinks fit, and whenever necessary to recommend any course to be taken, and the responsibility of not carrying out what he recommended would rest with the council, but I think it would be very inconvenient to put the large number of necessary officers connected with the general business of the corporation under the control of any officer, either the officer of health or anybody else.

2526. Supposing you had such a system namely, a sort of consolidation of inspectors, would that conduce to economy do you imagine?—I do not think it would at all, at least not in Manchester. I am of course speaking of ourselves, and I do not think it would lead to the slightest possible economy.

2527. You think that it would be better that he should be the servant of the local authority?—Yes, certainly.

2528. Leaving that authority to consider what should be the number and classes of inspectors to carry out their arrangements?—Yes, certainly.

2529. You state broadly that you would only have in any case two authorities, the local and the central?—I think so, decidedly.

2530. With the magistrates as an executive body to carry out the law simply?—Yes, I think so, decidedly.

2531. If the magistrates in petty sessions had the duty of inflicting fines for the non-fulfilment of the obligation placed upon the district by the Secretary of State, would not there be some difficulty with regard to the evidence brought before them in such cases?—No, because in my opinion the evidence would be exceedingly simple. The only facts which would have to be proved before the magistrates would be simply that an order had been issued by the Secretary of State, and served upon the local authority, and that for the time mentioned in such order no steps had been taken to comply with it. The duty of the magistrates would be ministerial; they would be obliged to impose penalties, and if they had any discretion at all it would only be as to the amount of the penalties; and if they did decline to convict, a mandamus would issue as a matter of course to compel them. As I say, their duty would merely be ministerial.

2532. You think that their duty would be very simple in such cases?—I do not see why there should be any difficulty.

2533. Might you not have difficult questions of degree in cases in which the order of the Secretary of State was partially or ineffectively carried out?—I think that that should be left entirely to the Secretary of State. I do not suppose that extreme measures would be taken if the local authorities were showing any disposition really to deal with the question which might be the subject of the order, and unless they satisfied the Secretary of State in some way or other, it would leave them liable to penalties.

2534. Would you propose that the Secretary of State should appear (not of course in person) before the magistrates and state that his order had not been complied with?—There would have to be some arrangement as to how that proceeding would be initiated. I have hardly gone into those matters of detail, but it would be entirely a ministerial act involving little or no responsibility, and I do not see that there could be any difficulty in determining in what manner application should be made to the justices.

2535. Have you considered at all the class of inspectors that ought to be sent down by the central authority, supposing it were the Secretary of State, in cases of complaint?—No, I really have not, because I think that would depend, to a great extent, upon the nature of the complaint and the probable duties which would have to be discharged by the inspector. If, as has been suggested, there was a consolidation of engineering inspectors and medical inspectors, and they were acting under the same central authority, either an engineer or a medical man would be sent down, according to the nature of the subject which he would have to investigate.

The witness withdrew.

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(14.) Edwin John Hayes, Esq., examined.

2536. (*Chairman.*) You are town clerk of Birmingham, are you not?—I am.

2537. Were you before that town clerk of Wolverhampton?—I had been town clerk of Wolverhampton for 12 years.

2538. How long have you been town clerk of Birmingham?—Three months only.

2539. Then your chief experience of the working of local government has been in Wolverhampton?—Yes.

2540. What has been the local government there?—It is a municipal corporation under the Municipal Acts, a local board of health under the Public Health and Local Government Acts, and the town council in their municipal capacity and also as a local board of health, possess other powers under "The Wolverhampton Improvement Act, 1831."

2541. Is it a borough?—Yes; and the town council are the local board of health.

2542. Have you adopted the Local Government Act?—Yes; the council adopted the Public Health Act immediately upon its coming into operation in 1848, and from the passing of the Local Government Act of 1858, the latter Act has been in operation in the borough.

2543. How have they worked?—We have found, in consequence of the numerous provisions of the other Acts incorporated in those Acts, and also of the other Acts which have been passed since, and which have more or less to be worked with them, very considerable difficulty; for instance, there has been the Public Health Act and some amendments of it; the Local Government Act of 1858 and the amendment of it in 1861; numerous Nuisances Removal Acts and various incorporated Acts, and all of them, have been more or less in operation in Wolverhampton and many other towns similarly situated, and it has been found extremely difficult, and in fact occasionally almost impossible, to carry out the provisions of those Acts. We found considerable difficulty, for instance, when the Sewage Utilization Act of 1865 passed. A minute of instruction was issued from the Local Government Act Office stating that a sewer authority existed everywhere, and giving instructions to the sewer authorities for the carrying out of the provisions of the Act of 1865. I found, upon looking at the Sewage Utilization Act of 1865, that Wolverhampton at all events was not a sewer authority, nor indeed was any town that was similarly situated, that is, where the

Public Health and Local Government Acts were in operation, for one of the sections, especially exempts from its operation all places wherein the Public Health Act and the Local Government Act were in operation. It is the second section of the 28th and 29th Victoria, chapter 75, "This Act shall "not extend to any part of the metropolis as "defined by the Act of the session, 18th and "19th years of the present reign, chapter 120, "for better local management of the metropolis, and "shall not, with the exception of clause 15, extend "to any parish as defined in the schedule to this "Act, in a part of which parish the Public Health "Act, 1848, and the Local Government Act, 1858, or "one of such Acts, is in force at the time of the "passing of this Act."

2544. The second section of the Act of 1865 which caused the difficulty to which you refer was repealed, was it not, by the Act of 1867?—Yes.

2545. So that the difficulty to which you refer occurred between the Act of 1865 and the Act of 1867?—Yes.

2546. Are there any other instances in which numerous Acts upon this subject have produced conflict and difficulty at Wolverhampton?—Yes. With regard to the power to make byelaws, the Local Government Act, 1858, section 34, enacts that every local board may make byelaws with respect, amongst other things, to the sufficiency of space about buildings, and to the closing of buildings or parts of buildings unfit for human habitation, and to the prohibition of their use for such habitation, but there is a proviso to that section which makes it virtually a dead letter; it is in these words, "provided always that "no such byelaws shall affect any building erected "before the date of the constitution of the district." Some byelaws framed under that section came before the Court of Exchequer in the case of Burgess *v.* Peacock, 4 New Reports, page 365, where a local board, in pursuance of section 34 of the Local Government Act, made a byelaw closing a house, and it was held that they had no power to do so. I am not aware that any Act exists which gives the power that was evidently contemplated by that section, so that the very class of houses, namely old and ruinous dwellings, that requires supervision, is exempt.

2547. Is not the town of Wolverhampton at this moment going to Parliament for an Improvement Act?—Yes.

2548. And the object of that bill is to codify the whole of the law so far as Wolverhampton is concerned? It has been found so difficult to carry out the provisions of the public and incorporated Acts that it has been deemed desirable by the town council to place in an intelligible form and under appropriate headings, such as streets, buildings, police, police regulations, sewers, markets and fairs, parks and other things, all the provisions that they think necessary for the good government of their town.

2549. You mean that actually Wolverhampton has found the confusion of the public Acts so great that they are going to Parliament privately to codify the public law for their own purposes?—Yes; for these amongst other things. They have recently acquired the waterworks, and there were six Acts of Parliament in relation to the waterworks in existence, five private Acts, and the Waterworks Clauses Act, but with the exception of the waterworks they have no undertaking of a public nature; they do not own the gas; they are not a burial board, nor indeed is there anything exceptional in Wolverhampton.

2550. Will this bill which they now have before Parliament for the purpose of consolidating the law, consolidate not only the public law, but any private Acts that there are?—My plan was to repeal or make inapplicable to Wolverhampton the existing public and local Acts, and to codify them, adding such other powers as the wants and circumstances of the locality required. As to the waterworks the companies, to whom the corporation have to make annual payments, objected to the repeal of their Acts, and the framework of the bill has therefore been altered. We are to schedule in the Act such of the provisions of the existing Water Acts as we think should apply so far as the corporation is concerned, but without repealing the Water Acts. The bill will render inapplicable after the passing of the Act the Public Health Act, the Local Government Acts, and other scheduled general Acts, so far as Wolverhampton is concerned.

2551. If this bill passes, there will be but one sanitary law for Wolverhampton in the shape of local government, and outside that there will be nothing but certain Waterworks Acts?—The Sanitary Act, 1866, will still apply, as will also certain other general Acts. One of the objects of the bill also is to obtain additional borrowing powers. There were considerable difficulties about the sewage; Wolverhampton naturally is well drained, but one of the great difficulties in carrying out the system of main sewerage was the outfall. By arrangement with the owners of land and with the canal and railway companies a scheme of sewerage has been adopted and is now being carried into operation, one of the objects being to utilize the sewage on land, and with this view an estate has been purchased about three miles from the town; the purchase money is not yet paid, and one of the objects of the bill is to enable the corporation to borrow money on the security not only of the rates, but of the estate itself, to pay the purchase money. It is quite a new idea. I know of no other instance of similar borrowing powers. A power is inserted in the bill to give the estate itself as the primary security, and, as a collateral security, the rates. The result will be that the town will be able to borrow money at a comparatively low rate of interest, and the ratepayers of the present generation, and the next, and perhaps for several generations to come, will only have to pay the interest on the money, whilst the Green Field security, which is yearly improving, will remain intact and always be a good security for the principal. In my judgment such a power as that, which, I may observe, Lord Redesdale at first objected to as being unreasonable, will be extremely useful in Wolverhampton and other towns for sewerage purposes. The ordinary mode has been to pay off, by way of terminable annuity, a thirtieth part of the principal in addition to the interest; and by my plan the town would not have to pay off any part of the principal so long as they arranged for the continuance of the mortgage, thus making a difference in their favour in this respect of 1,000*l.* per annum, equal in Wolverhampton to a rate of about 1½*d.* in the pound.

2552. Is it your opinion generally that the borrowing powers are not sufficient for local authorities?—Yes, I have found it so in my experience. I think in the instance that I have named they are defective, and there should be a power to mortgage the property of the corporation or local boards as well as the rates.

2553. With that additional power, do you think that the borrowing powers would be sufficient?—I think that the Public Works Loan Commissioners should have power to lend for a longer period than they at present have. I believe that their power is now limited to 20 years, and I think it should be a very much longer period, say 50 or 60 years; and they should also have power to take such a security as I have referred to. It would be much preferable to the present mode of borrowing, a great saving to the ratepayers, and consequently an inducement to them to execute works of sanitary improvement which they at present hesitate to undertake on account of the heavy annual cost.

2554. And what do you think of the terms upon which the commissioners lend, and the conditions of repayment?—I think that they should lend at as low a rate of interest as possible, particularly when the primary security can be made the property purchased with the money borrowed; and that the period for repayment should be considerably extended.

2555. How do you find the local government of Birmingham conducted?—My experience of Birmingham has extended over only three months. At present I find that they have the Municipal Corpo-

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rations Act, and two Improvement Acts, the one passed in 1851 and the other in 1861. Some of the Public Acts are incorporated in the Improvement Acts, and there are other General Acts in operation in Birmingham.

2556. So that they adopt the Public Acts for certain powers in their local Acts governing the organization of the authorities?—They do so, but many of the General Acts are also in operation in Birmingham.

2557. Is there not a section in one of their local Acts which subjects their power of improvement above a certain amount to the control of a majority of the ratepayers?—Yes, it is so. Their improvement rate is limited to 2*s.* in the pound, and their street improvement rate as distinguished from the improvement rate, is limited to 6*d.* in the pound; and those two amounts cannot be exceeded except with the consent of the ratepayers, nor indeed, I believe, can the council again go to Parliament for any extended power without the assent of the ratepayers.

2558. Can you tell us to what extent the rates in the pound for the improvements have ever amounted in Wolverhampton; the largest amount you recollect?—I believe that 2*s.* 4*d.* or 2*s.* 6*d.* might be taken as the maximum for all purposes. There used to be a general district rate and a special district rate, a lighting rate, and a footway paving rate. Those were under the Public Health and Local Government Acts, but under the improvement bill, if passed, they will be abolished, and in lieu of them one rate will be levied to be called the improvement rate, and without a limit.

2559. Are those rates independent of the poor rate?—Yes, and they are also independent of the borough rate, which is collected with the poor rate under the powers of the Municipal Corporations Act.

2560. When you speak of 2*s.* 6*d.* in the pound being the largest amount of rates that you recollect for local purposes, what were the local purposes included in that?—That would include everything that could be done under the powers of the Public Health and Local Government Acts.

2561. There would be the poor rate besides, and the borough rates besides, would there not?—Yes.

2562. Can you state what the whole amount of the local rates has ever reached to in your recollection at Wolverhampton?—I should think that the average has been about 5*s.* in the pound, 6*s.* 8*d.* was, I believe, the highest, and about 4*s.* the lowest.

2563. What is the population of Wolverhampton?—In the municipal borough the population last year was 68,000.

2564. Has the local government of Wolverhampton been really effective in removing nuisances?—Yes, they have been exceedingly successful as far as their powers have extended.

2565. Can you state what the mortality of Wolverhampton has been for the last ten years?—Yes. The Sanitary Committee, in November 1868, laid before the town council a statement showing the number of deaths during the then past year, and also the number during the nine previous years. The deaths were—

For the year ending 30th September	1859	1616
„ „	1860	1640
„ „	1861	1518
„ „	1862	1538
„ „	1863	1804
„ „	1864	1693
„ „	1865	1653
„ „	1866	1849
„ „	1867	1516
„ „	1868	1806
Total for the ten years		16,633
Average of ten years		1663
Deaths in 1868		1806
„ 1858		1462
Increase		344
Population in 1868, about		68,000
„ 1858, „		58,000
Increase		10,000

In 1868 the deaths were 1 in 37 of the population; in 1858, 1 in 39.

2566. Do you consider the mortality high or low?—Much higher than it ought to be.

2567. Why do you think it is so high?—Primarily because there is no system of main drainage of the borough. Surface drains exist and are very objectionable. There are open ditches in the town, and similar sources of evil which would be remedied if the main drainage works were in operation. They are now in course of construction, and in my judgment will prove of great benefit, and reduce the rate of mortality.

2568. How far has smoke consumption been carried out in Wolverhampton?—Not at all; no steps have been taken.

2569. Do you believe that the smoke might be consumed there?—I have heard that several patents have been in operation by persons in the neighbourhood, and that in the instances where they have been used they have been successful.

2570. Can you tell us the rate of mortality at Birmingham?—It is exceedingly low. I noticed last week that it was about the lowest of all the large towns in England.

2571. Can you at all attribute that to any particular cause?—I should think possibly it would be attributable to the favourable situation of the town naturally, and the sewerage works being in operation, and also to the admirable system of inspection of nuisances throughout the whole of the borough.

2572. Have you any suggestions to make as to the alteration of the law, either with regard to local government purposes or nuisance removal?—I will put in, if you please, a letter that I was asked to write to the Secretary of State in September 1865, when Sir George Grey filled that office. That letter was printed and sent to the members of both houses of Parliament, and a scheme is there annexed as to sewerage. With the permission of the Commission I will put it in as expressing my opinions, and it is as follows:

"Town Clerk's Office, Wolverhampton,
"Sir, 9th September 1865.

"It will be within the recollection of the authorities of the Local Government Act Office that on several occasions I have had the honour of communicating with them relative to the necessity for further legislation of a general nature, at the instance of Her Majesty's Government, for the improvement of the laws affecting local government and the public health.

"In November last, as clerk to the local board of health of this borough, I received a circular letter from the office, requesting suggestions for the amendment of the Local Government Act. My experience of its working in this district induced me to make further communications upon the subject to the department of which you are the head; and I indulged the hope that during the last session of Parliament the Public Health Acts, the Local Government Acts, the Removal of Nuisances and Diseases Prevention Acts, the Common Lodging Houses Acts, and the several other statutes relating to the good government and health of towns—all of which are more or less defective—would have been swept away and replaced by a well-considered measure, embracing in one statute, with all requisite amendments, the entire law upon these all-important questions.

"The circular recently addressed by the Privy Council to the mayors of towns and other local authorities, in consequence of the threatened outbreak of cholera, has lead me to address you, with a view of pointing out some of the difficulties under which local boards of health labour.

"It is popularly believed that governing bodies in towns are invested with ample powers for the removal, in a speedy and inexpensive manner, of nuisances prejudicial to the public health, for the removal of houses unfit for human habitation, and, in fact, for the accomplishment of every requisite improvement of a sanitary nature.

"The Local Government Act, 1858, sec. 34, enacts that every local board may make byelaws with respect (amongst other things) to 'The sufficiency of the space about buildings, to secure a free circulation of air, and with respect to the ventilation of buildings. With respect to the drainage of buildings, to waterclosets, privies, ashpits, and cesspools in connexion with buildings, and to the closing of buildings or arts of pbuildings unfit for human habitation, and to prohibition of their use for such

'habitation.' But this power virtually becomes a dead letter, owing to the following proviso: 'Provided always, 'that no such byelaw shall affect any building erected 'before the date of the constitution of the district.'

"I apprehend that the term 'constitution of the district,' means the date of the application of the Public Health Act and Local Government Act to the particular district. The Public Health Act, 1848, was applied to Wolverhampton shortly after the passing thereof, and the Local Government Acts are also in force in this borough.

"Byelaws were framed and published by the authorities of the Local Government Act Office, under the power supposed to have been given by the 34th section, and issued as models for the use of local boards of health, and were adopted with certain alterations approved by the Home Office, not only in this borough, but I believe, in most places throughout the kingdom where the Public Health and Local Government Acts were in operation, and no local Act existed giving more ample powers.

"Serious doubts arose about the validity of the byelaws above referred to, as applicable to old buildings, *i.e.*, any building 'erected before the date of the constitution of the district;' and the judgment of Chief Justice Erle, in the case of Burgess *v.* Peacock, 4 New Reports, 365, shows that where a local board, in pursuance of a byelaw under the 34th section of the Local Government Act, closed a house they deemed unfit for habitation, which had been built prior to the constitution of the district, they had no power to do so. Other decisions of the superior courts also show that, in consequence of the restrictive proviso set out above, many of the byelaws suggested by the Local Government Act Office, and issued for the guidance of local boards, cannot be supported. Indeed, circulars emanating from the office in June and November 1864 refer to the difficulties I have pointed out; and in the latter circular Mr. Tom Taylor, the secretary, states:—'Difficulties of which you may be aware 'have been experienced in enforcing the byelaws framed 'under the 34th section of the Local Government Act; 'moreover, the provisions of the section as it stands have 'been held to limit the powers of local boards under 'the section to buildings erected after the adoption of the 'Act, thus excluding from control the very description of 'buildings which, as a general rule, most require super-'vision and improvement.'

"It is true that by the Nuisances Removal Acts some very salutary provisions have been made, whereby justices are enabled to prohibit the use of houses unfit for human habitation, and local boards are empowered to execute the order of justices, in the event of default of the owner or occupier; but, as is observed by Mr. Lumley, in his work on the Acts (2nd edition, p. 30), 'The statute also provides 'that the premises against which the order shall have been 'obtained shall be chargeable with such costs, expenses and 'penalties to the extent of a year's rackrent; but it is 'not clear how this provision is to be rendered available. 'No process is supplied whereby an occupier or owner 'is to be attached in respect of the default of his pre-'decessor.' Independently of this defect, the power contained in the 13th section of the Act of 1860 is too limited, inasmuch as it only empowers justices to prohibit the using of houses unfit for human habitation until the same are rendered habitable. As frequently happens in large towns, nuisances in connexion with houses are so inseparably connected with the houses themselves, that the removal of the houses would alone insure a satisfactory and permanent abatement of the existing evil; and, in order to obtain such a result, additional powers should be given to justices, whereby the houses which in reality create and foster many of the nuisances could be entirely demolished. I specially refer to houses in districts where numbers of miserable two-roomed dwellings are so crowded together and exposed to the pestilential exhalations of the cesspools and privies which surround and form part of them, as to render it practically impossible to apply with success the present powers. Fever and diseases of the most virulent nature are the characteristics of these localities, and yet the same state of things must continue until some stringent provisions of the legislature can compel the owners to take down these wretched dwellings and replace them by more open and spacious buildings. It may be urged that such a measure would operate unduly against owners, on account of the cost of executing the work, but a regard for the health and lives of those poor creatures who are obliged to eke out a lamentable existence in these noisome colonies is paramount to any mere pecuniary consideration.

"A still greater evil exists. I refer to the want of comprehensive and compulsory powers for the main drainage and sewerage of towns.

"In this borough, with its population of between 60,000 and 70,000 inhabitants, the existing sewerage is extremely defective. Difficulties, numerous and great, have been overcome; a plan for the proper sewerage of the entire borough has been very carefully prepared by direction of the town council; the details of it have been checked under the superintendence of civil engineers eminent for their knowledge of sanitary requirements. The government inspector, Mr. Rawlinson (who knows Wolverhampton well), has inspected the proposed outfalls, carefully examined the scheme, made suggestions thereon, and finally approved of it. It has also met with your approval, and you have given your sanction to the loan required for the execution of the works, and I believe that the scheme has also met with the general approbation of the inhabitants, and that the public voice is strong in favour of its being carried out.

"Anyone unacquainted with the legal difficulties which beset such an undertaking would naturally inquire why we have not proceeded with it. The inefficient state of the present law supplies the answer. Local boards of health have not sufficient powers to effect main sewerage works without embroiling themselves in litigation, entailing upon their constituents heavy consequent expenses, and having their operations paralyzed by injunctions when the powerful aid of the Court of Chancery is sought.

"The restrictive provisions of the Public Health Act rendered it practically impossible to sewer a town situated as this is; and I am informed by those who are well able to judge that from the favourable conformation of its surface, Wolverhampton is in an engineering point of view, not by any means difficult to sewer. The Local Government Act of 1858 extended the sewerage powers, but not sufficiently. That Act was amended in 1861, and it was then hoped that at last all towns could be properly sewered. The steps to which I have referred were accordingly taken by the town council, but I still doubted the sufficiency of the powers granted by Parliament. I therefore prepared an elaborate case, wherein all these powers were stated, and the difficulties presenting themselves fully referred to. The advice of eminent counsel, including Mr. Powell, Q.C., the recorder of this borough, was taken; consultations were held, attended by gentlemen thoroughly acquainted with the details of the proposed scheme, the requirements of the inhabitants and the obstacles to the accomplishment of the object in view; the case was most ably considered and answered, and the opinions thereon confirm the impressions I had formed that the powers were defective, and further legislation was absolutely requisite.

"The voluminous and important evidence given before a Select Committee of the House of Commons on the sewage question in June 1864 has only to be referred to for the purpose of demonstrating the soundness of counsel's advice. Birmingham, Coventry, Leamington, Croydon, and numerous other places might be mentioned where large sums of money have been spent in the execution of sewerage works, in the expectation that the legislative powers were ample; long and expensive litigation has ensued, and finally injunctions have been granted materially interfering with the completion of the works. According to the following extract from the evidence of Mr. Tom Taylor (page 165 of the Committee's report), it would appear that a most deplorable state of things exists at Hitchin, in consequence of an injunction having been obtained against the local board of that place. The evidence runs thus: 'Was not 'an injunction obtained at Hitchin?—Yes. What was the 'result of that?—The result of that case was to suspend 'the operations of the local board at Hitchin. The board 'were so afraid to go on with their functions, in conse-'quence of their liability to proceedings, that they resigned '*en masse*. No other members came forward for re-election, 'and Hitchin has been without a local board ever since. 'A receiver has been appointed under statutory power to 'obtain in the shape of rates the interest on the loan 'which has been raised at Hitchin, for the sewerage of the 'town, but there is no body at Hitchin exercising the 'functions of a local board. What becomes of the sewage 'now?—I presume that, so far as the works are completed, 'it runs into the river; but, inasmuch as there is no body 'against whom the persons aggrieved can take proceedings, 'proceedings have not been taken. In fact, the only 'change is that the river has not been freed from the 'sewage, but that the town has been freed from the local 'board?—Yes.'

"Even if such revelations as the foregoing evidence discloses stood alone, local boards might well pause ere they committed themselves to a fate such as that which has befallen the towns I have mentioned. Therefore it is that in Wolverhampton the scheme for efficiently sewering the town is inevitably held in suspension.

"Parliament is apparently unaware of the defective character of the Acts above referred to, for the only statute passed since 1861, having immediate reference to sewage questions, 'The Sewage Utilization Act, 1865,' by sec. 2. excludes from its application those parishes where the

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Public Health Act, 1848, and the Local Government Act 1858, are in force; thereby assuming and, as it were, declaring the provisions of those statutes sufficient.

"Companies formed for commercial purposes and with the object of enriching their shareholders, have comparatively little difficulty in obtaining compulsory powers of the most complete character, whilst the legislature has withheld from those whom it has charged with the administration of the laws affecting the public health those efficient legal provisions essential to the due discharge of the duties imposed upon them.

"Towards the close of last year, and before the debates upon the Sewage Utilization Bill took place, a deputation, composed of representatives of governing bodies from many of the large towns, waited upon you, when a discussion ensued upon the sewage question. Acting on the invitation then given I had the honour of forwarding to you a list of suggested provisions* to be inserted in any general Act of Parliament upon the subject. The opinion of counsel before alluded to also contains suggestions of a like nature. They are as follows:—

"'We think a general Act on the subject is desirable and necessary, and our view of the kind of legislation required is this:—

"'That local boards should be empowered to prepare a map or plan, which should be deposited in some convenient place.

"'That public notice should be given of the scheme, and of the place where the plan of it was so deposited for inspection.

"'That notice should be served upon the owners and occupiers of the lands to be entered upon, &c.

"'That persons interested should be at liberty to object in writing to the whole or any part of the scheme; and such objections should be heard and determined by the local board.

"'That there should be an ultimate appeal within certain limits, from the decision of the board, to the Secretary of State, or to some other public officer or body, to be named in the Act, whose decision should be final.

"'That after the appeal so determined, and after a certain time from the deposit of the plans, the local board should be at full liberty to close streets, enter upon lands, and do all other things necessary for carrying out the scheme, making compensation to the owners and occupiers of lands entered upon for any damage they may do to those lands, to be determined by justices or in a manner to be provided for by the Act; and of course leaving the board and its officers and contractors to their common law liability for any damage resulting from their negligence or improper exercise of their powers.

"'The object of such provisions would be to get the objections to the scheme before it is commenced, and not to leave the scheme subject to continual objections during its progress.

"'We may observe that the powers given to local boards generally are at present more limited than these which are given by the City Act (City of London Sewers Act, 1848. 14 & 15 Vict. c. 91.) There the fullest powers are given to enter on and under all places public or private, doing as respects public places as little damage as may be and making full compensation for all damage wilfully or negligently done; and also making full compensation to the owners of private property.

"'By sec. 53 the amount of damage is in all cases to be determined by justices, and the Act only speaks of a nuisance when empowering the commissioners to select a site for collecting and selling manure.

"'The Metropolitan Management Act (18 & 19 Vict. c. 120), contains somewhat similar provisions, and gives full power to close the whole or parts of streets, and consequently these Acts afford precedents as far as they go for such an alteration in the law as we have suggested.'

"I cannot within the compass of a letter enter into details such as I should desire, and, indeed, were it not for the grave importance of the question I should fear I had already trespassed too much upon your time and patience. I trust, however, that the interest you have hitherto evinced in sanitary reform will induce you, at the earliest possible period, to introduce and lend your powerful aid to the passing of a law such as I have referred to, and which shall give to local boards of health ample powers to execute sewerage works, and provide for the comfort and welfare of Her Majesty's subjects in populous places, particularly one's poorer brethren, whose lot it is to dwell in the crowded streets and pestiferous courts and alleys of large towns.

I have the honour to be, &c.

E. J. Hayes, Town Clerk.

The Right Honourable Sir George Grey, Bart.,
Secretary of State for the Home Department."

* "Sewerage.

"Suggestions as to the provisions necessary to be inserted in any general Act of Parliament relative to the above question. (*Sent to the Home Secretary in* 1864.)

"Apart from the necessity which exists for the amendment and consolidation of the existing law relative to public health, local government, and the removal of nuisances in other respects, the following points in connexion with the important question of sewerage are respectfully submitted for consideration:—

"Assuming the present Acts to remain, the following powers should be given:—

"To make a plan of a scheme.

"Full notice of it.

"Power to appeal to local board against it or any part, with an ultimate appeal to the Secretary of State.

"After appeals, and at a certain time from deposit of plan, scheme to be binding upon all parties to be affected by it.

"Power to board to enter upon lands, purchase lands stop streets, &c., to carry scheme into effect, and to cause sewage to pass and flow according to scheme.

"Compensation to be made by board to all persons whose lands shall be entered upon or affected by the carrying out of the scheme, to be settled by justices.

"If the present Acts are to be repealed, a new Act should give all the present and future sewers to the board.

"Should give them full powers to make new ones in similar terms to the city Act.

"It should also give powers to make a scheme similar to the powers above suggested.

"These are mere general notions, and would require elaborating and many ancillary powers to be given.

"The law should compel all objections to be made to a scheme before it is commenced, and if not then made the scheme should be carried out, and no person should have power to stop it.

"Compensation must, of course, be made in respect of lands interfered with, or rights of easement taken away or damaged.

"The board should not be confined to its own district. The protection by appeal to the Secretary of State will be sufficient to prevent the board going out when unnecessary."

2573. (*Mr. Shaw.*) You told us that the kind of mortgage in which the land itself was assigned to the mortgagees as security related to land intended to be used for the utilization of sewage?—Yes.

2574. Do you not think that after that land was so used any court of law would struggle very much against giving the parties any benefit from that mortgage if it was likely that the effect would be to stop the utilization of that sewage; would they not adopt Lord Cairns's doctrine about railway debentures, that public rights must prevail over private rights?—I think not. I think that there is a great distinction. The estate itself would be given in mortgage to the mortgagee as the primary security and the rates would also be given to him as a collateral security. I should give him the estate in order to improve his security.

2575. But it comes to this, does not it, that he could not enforce that mortgage without stopping the whole sewage outlet of that town?—I should not give to the mortgagee the power of sale of that estate in the ordinary mode. It should be a very special power of sale if you gave him the power of sale at all, but a power of leasing would be the better mode, so that instead of selling the estate he should be able to lease it. The power of leasing is a very usual one in mortgages as well as the power of sale, and the mortgagee would then receive the rent and produce of the land. I may mention an instance where so far from there being a local nuisance from the land, the rent which was 600*l.* a year has been raised; a tenant has been found to pay already, to start with, an increased rent of 150*l.* and the future increase is to be the subject of arbitration at given periods. I think the first will be after two years and the next at the end of three years from the expiration of the two.

2576. So that the mortgagee should be able to let it to any farmer to raise crops from that land subject to the sewage utilization going on?—The *modus operandi* is this: the corporation are the owners of the estate and they let it on lease to a farmer who is not to underlet without their consent. He has taken it

already at an increased rent before receiving the sewage, anticipating the benefit that he will derive from the sewage, and the amount of the increase of rent in the future is to be the subject of arbitration. I propose that in order to pay for the purchase money of that land, which will always be a great benefit and must increase in value, the present generation should not be taxed with the payment of the principal, nor indeed should the next generation; but that the corporation should mortgage the estate paying the interest only, and reserving the right of using the land for sewage purposes.

2577. You mean that the mortgagee should be able to make any profit he could out of it, if he were obliged to resort to this security, subject to its stilll being used for is a no sewage?—Yes; itve mode, but I think it is one which will probably work extremely well; and I have reason to believe that it will be adopted in other towns.

2578. (*Mr Cave.*) Practically the mortgagee gets the rent as a security, does he not?—Yes, and I desire it to be understood that I would give no power that would defeat the object of the purchase, namely, the utilization of the sewage.

2579. (*Chairman.*) Do you find that the system that you have spoken of, as far as regards the utilization of sewage, will be the same in Wolverhampton as is now being tried in Birmingham?—Yes, I believe it is the same. At present it is not in operation in Wolverhampton, but the system, I believe, will be the same.

2580. Can you state the amount of money which has been borrowed for public works in Birmingham and in Wolverhampton?—I cannot now state the amount for Birmingham. The following statement, which I prepared for the Wolverhampton Improvement Bill now before Parliament, and which is scheduled to that bill, shows the financial position of the corporation of Wolverhampton, on 31st August 1868, with respect to incumbrances, sinking fund, and borrowing powers. A sum of 1,200*l.* has been borrowed subsequently.

	£	s.	d.	£	s.	d.
I. Incumbrances.						
1. Borrowed, on mortgage of general district rates, under Improvement Act of 1853, sec. 59 (authorizing borrowing to extent of 50,000*l.*), to pay off mortgages created by the town commissioners under Act of 54 Geo. III., cap. 106	18,600	0	0			
Of which there has been paid off	8,625	0	0			
Leaving due				9,975	0	0
2. Borrowed, under same power, for purchase of market house and market rights. Principal and interest repayable by way of terminable annuities during 30 years	10,500	0	0			
Of which there has been paid off	1,742	12	10			
Leaving due				8,757	7	2
3. Borrowed under same power, to pay off mortgage debts falling due; to part pay market proprietors, and for erection of fat pig market; for part purchase of town hall premises and property adjoining thereto, and to defray cost of covering and improving market hall. Principal and interest repayable by way of terminable annuities during 30 years	20,300	0	0			
Of which there has been paid off	2,917	13	3			
Leaving due				17,382	6	9
4. Borrowed, on mortgage of general district rates, for 10 years, under Public Health and Local Government Acts, at interest at 5 per cent. per annum, to pay for purchase of land to form School Street	1,000	0	0			
The whole of which remains due				1,000	0	0
5. Borrowed, under same power, for like purposes as loan No. 3. Principal and interest repayable by way of terminable annuities during 24 years	13,700	0	0			
Of which there has been paid off	2,939	14	2			
Leaving due				10,760	5	10
6. Borrowed, under same power, to purchase land and premises in Commercial Road for a town wharf. Principal and interest repayable by way of terminable annuities during 30 years	2,000	0	0			
Of which there has been paid off	287	9	3			
Leaving due				1,712	10	9
7. Borrowed, under same power, to pay balance on purchase of town hall premises and Miss Mitton's property. Principal and interest repayable by way of terminable annuities during 28 years	2,907	8	8			
Of which there has been paid off	475	7	9			
Leaving due				2,432	0	11
8. Borrowed, under same power, to purchase land and property to form Skinner Street. Principal and interest repayable by way of terminable annuities during 30 years	1,550	0	0			
Of which there has been paid off	158	13	9			
Leaving due				1,391	6	3
9. Borrowed, under same power, for works of sewerage. Principal and interest repayable by way of terminable annuities during 30 years	37,000	0	0			
The whole of which remains due				37,000	0	0
10. Borrowed, under same power, for like purposes. Principal and interest payable in like manner	3,000	0	0			
The whole of which remains due				3,000	0	0
II. Sinking Fund.						
Sinking fund created under Local Government Act, 1858, for redemption of mortgage No. 4 and remaining unapplied				197	6	11
III. Borrowing Powers.						
1. Under Improvement Act of 1853, sec. 59, power to borrow for purchase of markets, &c., and for any purposes of that Act, on general district fund and rates	50,000	0	0			
Borrowed (mortgages Nos. 1, 2, and 3)	49,400	0	0			
Repaid	13,285	6	1			
Balance of loans due	36,114	13	11			
Unexhausted borrowing power under Improvement Act				13,885	6	1
2. Under Local Government Act, 1858, sec. 57, power to borrow for purposes of that or any incorporated Act, amount not exceeding assessable value for one year of premises assessable within borough, which, on 31st August 1868, was	190,555	0	0			
Borrowed (mortgages Nos. 4, 5, 6, 7, 8, 9, and 10)	61,157	8	8			
Repaid	3,861	4	11			
Balance of loans due	57,296	3	9			
Unexhausted borrowing power under sec. 57 of Local Government Act, 1858				133,258	16	3
3. Under Local Government Act, 1858, sec. 78, extended power to borrow for works of sewerage and water supply, on general district fund and rates, amount not exceeding two years assessable value, which, on 31st August 1868, was	381,110	0	0			
Unexhausted borrowing power, under sec. 78, of Local Government Act, 1858; no money having been raised under this power				381,110	0	0

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(B.) Position of corporation under Municipal Corporation Acts, on 31st day of August 1868, with respect to incumbrances, &c.

	£	s.	d.	£	s.	d.
Borrowed on mortgage of borough fund and rates, under Municipal Corporation Mortgages, &c., Act, 1860 (authorizing borrowing with consent of Commissioners of Treasury, to extent not limited), for purchase of Higgs' property for town hall; principal and interest at 5 per cent., repayable by way of terminable annuities during 30 years - -	3,800	0	0			
The whole remains due - - - - - - - - - -				3,800	0	0

The witness withdrew.

W. S. Daglish, Esq.

(15.) WILLIAM STEPHEN DAGLISH, Esq., examined.

2581. (*Chairman.*) You are clerk, are you not, to four local boards of health?—I am.

2582. And especially you wish to give the Commission some information with reference to the neighbourhood of Newcastle-upon-Tyne?—The local boards to which I am clerk are boards which are gradually proceeding from agricultural boards to becoming small towns. The local boards that I am clerk for are a number of local boards adjoining the river Tyne, on the north and south side. On the north side the Walker township district local board, which abuts upon the municipal borough of Newcastle; the next the Wallsend local board; the next the Willington Quay district local board, which abuts upon the municipal borough of Tynemouth; on the south side I am clerk to the Jarrow district local board, which abuts upon the borough of South Shields, and there is a local board for which I am not clerk, called the Felling district local board, which abuts on the municipal borough of Gateshead. In the three municipal boroughs which I have referred to, Newcastle, Tynemouth, and Gateshead, they all have private Improvement Acts specially passed by the House, in which provision is made that the first cost of sewering, paving, flagging, and channelling the streets, shall be in all cases paid by the owners of the property which abut upon the street, whether it be a highway or not a highway, according to the respective frontages of the property.* But unfortunately in the 69th section of the Public Health Act, 1848, under which all those local boards are worked, there is a provision that the first cost of sewering, &c., shall be paid in cases where the street is a highway out of the general district rates, the consequence of which is this, that whereas roads run directly through those municipal boroughs and through the rural districts which I have mentioned where the road leaves the borough, the first cost of paving, flagging, and channelling falls, as soon as it comes into the district of the local board, upon the general district rates, and not as ought to be in all cases of private improvement upon the property itself and its owner. This case arises very strongly in the board of Walker, which adjoins Newcastle, in which on one side of the road there may be a person having a house who is compelled if in the borough to pay for his own sewer, &c., at his own cost, whereas his next door neighboor who is in the local board district, inasmuch as it abuts upon the highway, compels the board generally to do that which ought to fall upon his individual property. This is peculiarly obnoxious to districts like those which I represent, as they are covered with ways which formerly were roads for coal to be taken down to the staiths or shipping places in the river, and which have now ceased to be actually roads for those purposes, but still they remain public highways. The whole district is also intersected with public highways, and the effect of this provision in the 69th section of the Public Health Act is absolutely to paralyze a large amount of improvement in those districts. I can state from personal knowledge that at this moment thousands of pounds are waiting the decision of this question; and inasmuch as in one particular board the great majority of the new houses will probably be made to abut upon the highway if the present law stands that those are to be paid out of the general district rate, the improvements will not be done. To remedy this a very influential deputation from those local boards which I represent waited some time ago upon Mr. Bruce, who was then the Under Secretary of State. Mr. Bruce carefully considered the question, having the plan before him which I now have in my hand, and he intimated to us that he saw the necessity of some change, and would introduce a measure by which equality should be preserved in all those cases, that is to say, that the first cost of those improvements should be borne by the owners of the property on the same system, whether the street was a highway or not a highway; but since coming to town I have received an intimation that owing to the action of this Commission that bill will not be proceeded with, and I am very sorry to hear it, because I am quite sure that until this question is settled, in at least two of the local boards which I represent, improvements of this description, sewerage, paving, flagging, and channelling, will absolutely cease upon any roads which are in reality or with regard to which there may be set up the pretence that they are public highways. I would particularly point out that so necessary is this that every one of the corporate bodies which I have mentioned have by a special section in their private Improvement Acts obtained those very powers, and in one case I believe the corporation went to Parliament chiefly for the purpose of obtaining such powers. If then such powers are so valuable for corporations, no reason can exist why those small local board corporations which adjoin them, and which are every day becoming more extensive, should not possess the same power.

2583. The provision which you have suggested you think ought to form part of any consolidated Act for local government?—Yes, certainly; the best provision which I have seen is in the Gateshead Improvement Act, which simply says in four lines that all improvements may be carried out at the expense of the owner of the property, whether the street is a highway or not a highway; but I think by simply striking out the words "not being a highway," in the 69th section of the Public Health Act, 1848, that Act would quite meet my views.

2584. Are you aware of other cases where villages having suddenly become towns, and the highways therefore converted into streets, the same difficulty has occurred?—In every one of those four cases with which I am connected it arose. In the case of Jarrow it has sprung up to 20,000 inhabitants from a very small number. I am speaking of within 15 years.

2585. Can you state about the amount of the population of the Tyneside local boards with which you are connected?—Of the boards to which I am clerk I should think it would be 50,000.

2586. What is the rateable value of that area?—About 80,000*l.*

2587. The villages in this case which have gradually

* The following are the sections in the three Improvement Acts of the Municipal Boroughs:—

28 & 29 Vict. cap. ccl. The Newcastle-upon-Tyne Improvement Act, 1865.—Sect. 24. If at any time any street or court formed, set out, or laid out either before or after the commencement of this Act is not sewered, drained, levelled, flagged, and paved or macadamized to the satisfaction of the corporation, they may at any time and from time to time order that it be freed from obstruction, sewered, drained, levelled, flagged, and paved, macadamized, and otherwise completed, with such materials, at such levels, with such inclinations, and with sewers and drains of such dimensions, and that the soil thereof be raised, lowered, or altered in such manner and within such time as the order directs; and thereupon the respective owners of the buildings and lands in such street or court shall, at their own respective expense, remove all obstructions in, upon, or under, and sewer, drain, level, flag, pave, macadamize, and otherwise complete such street or court within the time and in the manner prescribed in the order.

29 & 30 Vict. The Tynemouth Improvement Act, 1866.—Sect. 24. From and after the passing of this Act the powers given to the local board by sections sixty-nine of "The Public Health Act, 1848," and of section thirty-eight of "The Local Government Act, 1858," to compel the sewering, levelling, paving, flagging, and channelling, and the metalling of streets not being highways, may from time to time be exercised by the local board in respect of any highways or parts of highways in the borough which have not under those sections or any of them been at any time sewered, levelled, paved, flagged, channelled, and metalled by or at the expense of the owners or occupiers of the premises fronting, adjoining, or abutting thereon.

30 Vict. The Gateshead Improvement Act, 1867.—Sect. 36. The powers of the local board under the Public Health Acts for compelling the improvement of streets, not being highways, may from time to time be exercised by the local board with respect to highways and parts of highways which have not at any time been so improved by or at the expense of the owners or occupiers of the premises fronting or adjoining thereto or abutting thereon.

grown up into towns I presume are differently situated as to their provision for local government one from the other; some have and some have not local Acts?—Some have obtained the provisions of the Public Health Act at different periods, which of course increased the difficulty, and the difficulty is increasing every day which I refer to.

2588. Is there any other point which you wish to bring before the notice of the Commission?—Except in connexion with this question that we feel a great difficulty in altering or diverting any public highway within the district of our local board, the expense of going to the sessions, and the delays of a very serious kind, and if any provision could be given to us the same as is now possessed by the court of quarter sessions as to altering or diverting a public highway, not with the view probably of absolutely diverting any necessary road, but with the view of being able to cut off a certain corner of a road, which we cannot do at present, or with a view to straighten a road, so that any powers of alteration and deviation of public highways at present possessed by the quarter sessions should be vested in the local authorities, it would be very desirable.

2589. Do you mean that it should be possessed by one local board or by the aggregate local boards?—By each local board within its own district.

2590. What is the greatest amount of rates that you have known levied on the rateable value of the district for waterworks?—The highest I have known is 2*s.* in the pound per annum, and the lowest 1*s.* in the pound per annum. In one board we work at 1*s.* in the pound per annum, and in another board we work at 2*s.* in the pound per annum.

2591. What has been the poor-rate besides that?—The poor-rates vary in different parishes. Each local board follows the rating of the poor of the district in which it is situated. I have not the poor-law statistics.

2592. (*Mr. Powell.*) You have spoken about a highway, and you stated, did you not, that a private owner ought to pave that highway at his own cost?—Yes, the first cost.

2593. Is he alone to use this road which he has to pave?—As soon as he has made it, it then becomes a public highway for the use of the public, and then the future cost of maintenance is borne by the general district rate.

2594. But in the first instance the owner has no control over the width, has he?—He must make the street according to the width prescribed in the byelaws.

2595. You are contemplating, are you not, a highway which is already made?—No, that does not make the owner pay. Any right of footpath over which the public would go would give an exemption, and throw it upon the general district rates, and not upon the owner. It does not mean a turnpike or even a horse-path; and a footpath would give the same exemption. *W. S. Daglish, Esq.* 7 June 1869.

2596. Confining your answer for a moment to that point to which, I presume, your attention was chiefly directed, that is, roads used for carriages, a private owner would obviously have no control over the width?—My attention, mainly and chiefly, has been directed to the difficulties which have arisen in the case of footpaths not carriage paths; but the argument would be the same in the case of a carriage path, the owner would have no control over the proposed width.

2597. Then, seeing that this road which you speak of is to be used by the public, and not by the private individual only, it is obvious, is it not, that the paving must be of a more expensive character than the wants of a private individual alone would demand?—Undoubtedly, I quite admit that; but the same thing would apply to a street not being a highway. Every owner of property is always of opinion that the cost incurred by the local board in those works is too great an expense.

2598. Do you think it is a just thing to saddle a private individual in the way you suggest with this difference between what would serve his purpose and what would be required by the public, seeing that it is a public highway, and ought to be made strong enough and durable enough to bear constant use by the public?—I think it is; the private property has increased benefits, inasmuch as its being a highway the property probably is of more value by abutting upon the highway. I think the benefit in the one instance would meet the loss in the other.

2599. Of course in your district you have very heavy traffic with your vast population and the nature of your industry?—The traffic is heavy close to the centres of industry, but the chief traffic is not upon those streets which we would call highways. The chief traffic is upon those streets which being entirely new streets have been entirely paved at the cost of the owners. The chief traffic does not in any case that I know of follow as a rule the highway, because the ancient highways were not near where the centres of industry now are.

2600. (*Mr. Cave.*) By highway do you mean a street?—No; by highway I mean any road or way, whether horse or foot or carriage, over which the public by time and use have acquired a right.

2601. (*Earl of Romney.*) You mean what the Act of Parliament calls a highway, whether it be a footway or a carriageway?—Yes.

2602. (*Mr. Cave.*) Do you mean in the country or in a town?—Peculiarly in the country; it is the country that I am referring to where those difficulties arise.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 10th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, ESQ., M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. STEPHEN CAVE, Esq., M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
JOHN TOMLINSON HIBBERT, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

(16.) ROBERT ROBINSON CARR, Esq., examined. *R. R. Carr Esq.* 10 June 1869

2603. (*Chairman.*) You are clerk to the Sanitary Committee of the Town Council of Newcastle-upon-Tyne?—I am.

2604. What is the local governing body of Newcastle in sanitary matters?—The mayor, aldermen, and burgesses of the borough, under the Municipal Act, acting by their committee.

2605. Is there a local Act for Newcastle, or is Newcastle under the General Local Government Act?—It is regulated under its own local Acts.

2606. Has it not adopted the general Acts in any particular?—In so far as they have been adapted by the general law of the land and applied to municipalities where the law has been general, they have then

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taken action under them, but they have not taken any action to apply the Acts to Newcastle, but relied upon their own powers.

2607. What parts of any public Sanitary Acts apply to Newcastle?—The Sanitary Act of 1866, as amended in 1868, the Nuisance Removal Act, the Workshops Regulation Act, the Bakehouses Regulation Act, the Common Lodging Houses Acts, the Diseases Prevention Act, the Sewage Utilization Acts, the Baths and Wash-houses Act, the Acts regulating Burial Grounds, the Labouring Classes Dwellings Acts, the Public Health Acts, the Consolidation Clauses Acts, and some others.

2608. Upon other points Newcastle is governed, is it not, by its own special Acts?—It is.

2609. How many such Acts are there?—The first Act of the new corporation was passed in the year 1837, which repealed the statutes of the Georges' reigns. That Act was amended in the year 1841. In the year 1846 a subsequent Act was passed, and in 1850, in 1853, in 1855, and in the year 1865 other Acts were passed.

2610. When you talk of the new corporation what date are you referring to?—The year 1835, or rather commencing in 1836, when the Municipal Act was applied to the governing body of Newcastle-upon-Tyne, repealing their charters for local government.

2611. What is the population of the town now?—It is estimated by the Registrar General at 130,000, that is for the statistical purposes of the Government offices. According to the Census of 1861, the population was 109,000, and it would appear if it is advisable to make a distinction in the population between the old town proper and the five outlying townships which were added to the jurisdiction of the corporation in recent years, the old town population in 1861 was 61,000, and in the five outlying townships 46,000. In the year 1851 the figures stood thus,—in the old town the population was 57,000, and in the townships 29,000; that was very shortly before the sanitary provisions were applied to those townships.

2612. Were those townships not within the borough?—Not within the ancient borough.

2613. Are those townships within the borough at the present time?—Yes, they now are, and since the year 1853 the corporation have acted as the sanitary authority of those five outlying townships.

2614. What happened in 1853?—The corporation were made surveyors of highways in those outlying townships and obtained extensive jurisdiction over sanitary matters in those townships.

2615. What is the area of the town, and what is the area of the outlying townships added to it?—The entire area at present within the corporation jurisdiction is 5,325 acres 2 roods and 28 perches, of which 3,460 acres 2 roods and 38 perches belong to the outlying townships, and the old borough, comprising the four parishes extends to 1,864 acres 3 roods and 30 perches. The parishes applied as well to the old town within the walls as the district beyond the walls, but within the liberties of the town, a distinction owing to the circumstance that its original area was enclosed by a wall which comprised half a mile square in extent, the consequence was that that half mile was very closely packed against the river side property.

2616. Is there any part of the outlying townships which may be called agricultural, and not built upon?—A considerable portion.

2617. What is the rateable value of the town within the walls, and the rateable value of the outlying townships?—I have tabulated these statistics at contrast dates and the increase in the new town, both as regards population and value is most marked.

Parishes and Townships.	(*a*) Acreage.			(*b*) Population.				(*c*) Rateable Value.	
	A.	R.	P.	1831.	1841.	1851.	1861.	1853–4.	1868–9.
All Saints'	263	2	33	17,063	21,477	26,110	29,490	57,411	93,603
St. John's	85	1	22	8,135	8,761	9,858	9,140	27,393	45,611
St. Nicholas'	46	1	26	6,126	6,320	5,361	5,571	26,369	33,374
St. Andrews (including the Moors)	1,469	1	29	11,436	13,324	15,634	17,101	59,513	88,700
(The ancient borough)	1,864	3	30	42,760	49,882	56,963	61,302	£170,686	£261,288
Westgate	244	0	5	2,996	10,063	16,479	21,225	27,503	48,016
Elswick	756	2	38	787	2,384	3,080	14,345	12,738	66,667
Jesmond	681	3	4	1,393	1,721	2,089	2,230	5,176	14,059
Heaton	907	0	35	501	450	435	376	6,137	3,118
Byker	170	3	36	5,176	6,012	7,040	7,662		15,486
(The enlarged district)	3,460	2	38	10,853	20,630	29,123	45,838	£51,554	£147,346
Total of both (being the present municipal borough)	5,325	2	28	53,613	70,512	86,086	107,140	£222,240	£408,634
ADD—									
Benwell	-	-	-	-	-	-	1,771		
Fenham	-	-	-	-	-	-	89		
The parliamentary borough (comprising the Newcastle poor law union)	-	-	-	-	-	-	109,000		
							Estimated in 1869 by Registrar-General at— 130,503		

2618. Can you give us also the amount of rates which have been levied upon those two districts during the last two or three years for Local Government purposes?—The rates levied since 1865 throughout the borough are a general rate and improvement rate, the income from which has been about 87,000*l.* for the last two years, viz.:—

	1866·7	1867·8	Total 2 years.
Parishes or old borough	27,201	30,191	57,392
Townships or new town	13,975	16,328	30,303
	41,176	46,519	87,695

2619. What is the greatest amount of rates in any year that you recollect to have been levied in the pound on the rateable value for local government purposes?—For municipal purposes, a general rate of 2*s.* is the maximum amount, which is at present levied, and there is 7*d.* as an improvement rate.

2620. Under what Act is the latter levied?—That is under the Act of 1865.

2621. Are there any difficulties peculiar to the low town or water side property?—Yes; the low town is built against the hill banks of the Tyne, and traverses from the water side by narrow "chares" or lanes which the rising ground blocks up, and the ascent to the higher town is by steps or very steep banks. I may refer to the three principal banks, the Pandon Bank,

the Dean Street Bank, and the Forth Bank. I wish to show that the difficulty of the local government has been mostly with this very closely built property within the confined area.

2622. What you call the central town is more modern in building, and probably in a better sanitary condition?—Yes; opened out by the railway system and private improvements, and Mr. Grainger's streets.

2623. And the outlying township still more so?—I cannot say that; there has been such an accumulation of unfinished streets in the new town.

2624. What independent authorities are there in relation to those three different distinctions of property; is the town council the authority for them all?—For the whole of them at present, including the outlying townships.

2625. Are there no separate jurisdictions over the whole of this area?—Not at the present time.

2626. Were there formerly?—Yes.

2627. When were they combined?—In the year 1853 the corporation jurisdiction applied to the whole of the municipal borough, but before that time, from the year 1835, the townships acted independently for sanitary purposes and street arrangements.

2628. How is this area divided for poor law purposes; is it all one union?—It is all one union, but the union includes two outlying townships in addition to the municipal borough; and those two townships with the municipal borough constitute the parliamentary borough.

2629. Then in local government functions, including nuisance removal, have the board of guardians any conflicting authority with the town council?—Not within the municipal borough. In addition to that they have a jurisdiction in the outlying townships of Fenham and Benwell.

2630. In the outlying townships, for the purposes of nuisance removal, there are practically two sets of authorities acting side by side?—Yes, within the union district there are, but within the municipal corporation that is not so.

2631. (*Earl of Romney.*) In those other two townships where the board of guardians have authority the municipal authority have none?—The municipal authority have none.

2632. (*Chairman.*) Would the last Sanitary Acts of 1866 and 1868 constitute the council the sanitary authority as construed with your local Act of 1853?—Yes, within the townships and the old town.

2633. Does the Secretary of State in any way interfere with your local government?—Yes, by advice.

2634. Has he done so upon any occasion?—He has. We have had communications from the Secretary of State through the Home Office.

2635. Can you describe any particular instance which will show the Commission the mode in which they have given you advice upon any point?—They have advised us of the prevalence and approach of any epidemic on the continent and in the country, and they have given suggestions so that we might be fully armed to meet such things.

2636. But they have never interfered with your local government?—They have had jurisdiction under the Sanitary Act. When regulations were framed under the Sanitary Act, we had to have the direct approval of the Secretary of State to those regulations under the Nuisance Act of 1866, and with regard to the byelaws of the borough under the local Act of 1865; of course we require the approval of the Secretary of State to those regulations.

2637. What appeal would any person have in case of a grievance under any of your local government functions?—They could go to the Quarter Sessions. Newcastle has a sessions of its own; it is a town and county of itself.

2638. Is there any appeal provided in your local Acts?—There is an appeal by the most recent Act of 1865. The general magisterial law would of course apply to the proceedings of the bench as a bench of magistrates.

2639. Is there generally any conflict of authorities in any of your local government matters in Newcastle?—I am not aware of any. I cannot refer to anything but where the authorities have acted with great unanimity, both the municipal authorities and the board of guardians.

2640. When you say that the authorities have acted with unanimity what authorities do you mean?—The corporation, the board of guardians, and Her Majesty's Customs as having jurisdiction over the port of the Tyne. I may refer to the cattle plague, in which the board of Customs and the corporation have been quite at one in their administration of the law; and in quarantine regulations, on the approach of cholera to the coast, the corporation have been in close contact as regards advice in applying the law.

2641. What is the authority in Newcastle relative to quarantine matters on ships arriving with infectious disorders on board?—Stretching from the mouth of the Tyne to Newcastle there are two independent authorities at the extreme mouth of the river, viz. Tynemouth and South Shields, and then between those two extreme authorities and Newcastle we have the intermediate local boards of Jarrow, Wallsend, Howdon, Walker, the county authorities of Durham, the county authorities of Northumberland, the Newcastle guardians; the Gateshead guardians, and the borough of Gateshead, all having independent jurisdiction, inasmuch as their jurisdiction extends to the water between the port of Shields, which is the eastern boundary, and the port of Newcastle, which is the jurisdiction of Newcastle.

2642. Do those great number of authorities never come into conflict with each other?—They act in this way,—where their interests are common they approach each other by communication, and they have joint meetings when necessity suggests, but according to the existing law they have not general authority over the entire district, and any arrangements which they make common must be by consent; arrangements within their own jurisdiction they can absolutely make, but any common action must be taken by consent after arrangement and discussion. On the approach of the last cholera, the town clerk of one of the eastern authorities wrote to his colleagues in office suggesting such concerted action with the view to having hospital accommodation on the approach of the cholera, should it so come.

2643. If they either came into conflict or did not take action at all would the Privy Council have power to compel them to act?—Yes.

2644. Has there been any instance in which the Privy Council has had to interfere?—The Privy Council, under the Quarantine Act, issued an order applying to the Tyne in the year 1866. They applied the Act to the port, reciting that there was cholera on the continent, and giving to each of those authorities jurisdiction within their several areas for the purposes defined by Parliament in the health laws.

2645. How have your local authority acted generally with respect to town improvements, widening of streets, or public works generally?—Up to 1853 their operations were confined to the old jurisdiction, the borough proper comprising four parishes as well as the internal walls; and within the period from 1835 to 1853 they acted with Mr. Richard Grainger and the local board, who remodelled the central part of the town; and of their own independent action they have considerably improved the low town by removing the chares and the block property near to the water side from the quay to open out the approaches to the river. They widened some of the narrow streets, the Close particularly, and they demolished house property in Sandgate to a considerable extent, which was a very close district at one time; and after 1853 they obtained extended powers over the outlying streets in the townships of Westgate, Elswick, Jesmond, Heaton, and Byker, with a view to making unfinished streets which had been formed in those outlying districts at the expense of the owners of property in those streets.

2646. Has it been found that the limit which I

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understood you to say was imposed by the local Act of 1865 to 2*s.* in the pound has been an undue restriction upon necessary improvements?—It has not been found so.

2647. You think that they are going on as fast as they properly could, in fact, if there were no such limit imposed upon them?—Yes; for this reason, that we have as a supplementary rate, power to levy an improvement rate of 1*s.*, but we are 5*d.* from the maximum yet, for it is levied at 7*d.* only at present.

2648. In what way generally is the rate levied upon the inhabitants for public improvements? Who is charged?—The occupier; and since the year 1865 the owner is bound to pay one fourth of the levy from time to time, the tenant having authority to deduct that amount from his rent. In the year 1865 several of the municipal rates were consolidated into one general rate, there having previously been a watch rate, a lighting rate, a sewers rate, a paving and flagging rate, and a separate rate for each of the townships, and an improvement rate, and a new streets rate. All those rates were done away with in the year 1865, and merged into two rates, the general rate of 2*s.* for the purposes of the entire borough with the improvement rate of 1*s.* for street improvement; and after meeting those requirements, paying off the borrowed money and interest, any surplus of the improvement rate is available for the general purposes at the discretion of the corporation.

2649. Can you give us the rate of mortality in Newcastle?—Last week it was 22 deaths per 1,000. Since the year 1866 the corporation have made arrangements with the different registrars of the districts, who give fortnightly duplicate returns of what they send to the Registrar General in London, and those are tabulated according to the localities, and handed from time to time to the sanitary officers.

2650. How many per 1,000 have died in Newcastle per year during the last three years?—Last year the death-rate was 25·5 per 1,000.

2651. That is rather excessive, is it not, compared with other towns?—It is excessive, but it has gradually improved since the fever epidemic in 1866. I produce a table contrasting the death-rate of Newcastle with the eleven English towns included in the weekly issue of the Registrar General, showing that in the year ending 1868 we were 1·3 below 26·8 the average:—

Manchester	31·7
Salford	31·5
Leeds	29·5
Liverpool	29·0
Bradford	28·1
Sheffield	25·5
Newcastle	25·5
Hull	25·2
London	23·8
Birmingham	23·3
Bristol	22·0
Average 11 towns	26·8

2652. Can you tell us whether that excessive mortality applies to the low town particularly?—Yes; as regards the confined areas I should say peculiarly so.

2653. Can you state that in any particular places where the public works you have talked of have been carried on during the last 10 or 15 years the mortality has been reduced by such improvements?—I should most certainly say so; but as a means of comparison, without stating that sanitary operations are the cause, I submit a return of deaths from certain forms of zymotic disease for the past three years, showing that the total deaths from these causes alone have decreased from 990 in 1866, when fever was epidemic, to 635 in 1868, viz.:—

——	1866.	1867.	1868.	Decrease.
Measles	105	59	38	67
Scarlatina (epidemic in 1866–67)	500	453	274	226
Whooping cough	59	186	48	11
Typhus fever (epidemic in 1866)	203	160	113	90
*Diarrhœa (1868 was an excessively warm summer).	123	141	162	*
Total from these causes	990	999	635	355
Deaths from all causes	3,950	3,889	3,389	561

2654. What is the general state of the sewerage of Newcastle?—It has been considerably improved since the year 1853 over the whole town, there being now upwards of 60 miles of main drains in the town.

2655. Is the whole town made to discharge into any particular reservoir, or what is the nature of the sewerage works?—The main drains all discharge themselves into the Tyne.

2656. Have you ever had any proceedings threatened against you for polluting the river Tyne to such an extent?—Never, to my knowledge. The salt water tide flows beyond the borough twice in the day.

2657. Whereabouts is the discharge below the town, or where does the outfall into the river take place?—There are about seven principal outfalls ranging the entire extent of the town to suit the districts and the declivities.

2658. I suppose that the tide with all the filth keeps oscillating backwards and forwards within the town?—The salt water goes considerably above Newcastle, and the ebb tide carries the filth out to sea.

2659. I mean every time the tide comes in all this filth comes up again?—It may dam back for a time what otherwise would have been carried out to sea by the ebb.

2660. Have you no plan for improving the sewage under discussion?—I have heard our present borough engineer say that he intends to make a general report upon the state of the sewage of the town with a view to intercepting sewers at certain levels where the levels will admit, to catch the high land and to prevent all the sewage getting down to the low level.

2661. And to utilize the sewage in the way of manure?—Intending to bring it before the authorities and see how far it is practicable.

2662. Is there any complaint made in any place of foul effluvia and malaria from this sewage collected together?—I can certainly answer not at Newcastle.

2663. When the cholera raged at Newcastle did it particularly attach to certain localities?—It did.

2664. And whereabouts was it?—It was particularly in the low town, but certain of the high lands were affected as well. One of those townships was not at all affected with cholera; it was quite exempt from the death-rate.

2665. Has not the cholera been always more severe in Newcastle than in any other part of England?—In the year 1853 it was, but on the last visitation Newcastle was not heavily handled.

2666. Has it chiefly kept to the neighbourhood of the river?—Yes, it has; and when I say the neighbourhood of the river I mean the old town, where the property has been very closely packed.

2667. What is your water supply in Newcastle?—It is supplied from Whittledean by a private company.

2668. Do the corporation contract with the company for the supply of the town?—They have a tariff of charges in the Act of the Water Company, which regulates the general supply, and as regards the corporation supply they have a private agreement with the company.

2669. How is the payment made both for the private consumption of water and for the public consumption of water?—The public consumption of water has a uniform charge of 3*d.* per 1,000 gallons, which is paid by the corporation quarterly according to a meter supply, and the private consumption is generally by a meter supply for large manufactories at a tariff

arranged with the corporation, and for the public generally in residences it is at a rental tariff.

2670. The local Act of 1853 you stated was for the purpose of extending the sanitary powers after the visitation of the cholera; what was the principal object of the local Act of 1855?—That Act was consequent on a great fire which took place in the low town.

2671. And it gave you more power for street improvements, did it not?—Yes, for street improvements within the confined district of the old town.

2672. The local Act of 1865 extended the powers of the corporation both with regard to street improvements and sanitary regulations, did it not?—Yes, considerably.

2673. What led to the Act of 1865? that is to say, what defects of power were felt by the corporation which led them to get that Act?—The corporation found that they were without funds to enter more fully into street improvements, and they found that there was a confusion of the rating powers, more particularly with respect to their power over the owners of houses and streets in those townships which had grown up before the corporation got jurisdiction over those townships.

2674. Have the corporation powers over the owners of land to regulate street formations?—They have now very extensive powers. Since the year 1865 to the present time, 128 streets have been completed under these powers, at a cost of 45,000*l.*

2675. Will you state the nature of those powers?—They have the power to fix arbitrarily the description of work in new streets, or streets which have been already formed before they got jurisdiction over them, to estimate the expense, and call upon the owners to pay that estimate to the corporation before they commence the work.

2676. How do those provisions affect the tenants so far as regards rental?—The rental is increased in the new streets where the corporation have applied the powers.

2677. What are the different items of expenditure in your borough under the head of sanitary operations?—The principal items are the daily cleansing of the streets, the emptying of ashpits and privies, and street watering.

2678. Have you an extensive system of ashpits?—Yes, a very extensive system.

2679. When you talk of the sewage of the town flowing into the river you made out rather a worse case than you need. I presume if the ashpit system is extensive in Newcastle the greater part of the sewage is intercepted before it comes into the main drain?—I can give the figures showing the extent of that daily cleansing. In the four and a half years ending February this year the corporation removed 44,000 loads of street sweepings, 30,000 of rakings from the roads, 42,000 loads of scuttle ashes from property where they have no ashpits,—it being closely built property where they have no open convenience for ashpits, but where the corporation remove the refuse daily from the boxes placed outside,—and 172,000 loads from ashpits proper, of which there are 9,940 in the entire borough; and the monthly average of that amounts to 5,358 loads.

2680. Do all the excrements of the whole population go into those ashpits of various kinds?—Where they are connected with privies. In most of the properties the privies are connected with the ashpits, and the ashes are thrown over where there is a connecting communication, and are mixed with the soil, but where waterclosets have been introduced that is not so.

2681. No part of the actual excremental sewage goes into the river except such as may be washed in by the waterclosets?—That is quite so.

2682. Is there any extensive number of waterclosets in Newcastle, or is it confined to the better houses?—It is confined mostly to the better houses, and to the new property which has been built lately. Since the Act of 1866 waterclosets have been considerably increased in number.

2683. Have you a regular system of scavenging?—Yes, we have a regular system of scavenging.

2684. And do you sell the produce?—Not so extensively as might be. The farmers are not educated to use the manure, and it is a drug upon the hands of the corporation.

2685. What is the corporation staff and machinery for cleansing the streets?—I may say that I am quoting from a report of the engineer, who has lately gone into the question, after visiting most large towns in the kingdom, with a view to having a complete system, and the result has been that he advises the corporation to do it through their own staff instead of by contract.

2686. Why?—Because the contract systems from his experience in other towns do not operate well where the population and the area are large; the contractors have shirked their work, and they require so much looking after.

2687. Is the removal of refuse done daily throughout the town?—In the centre parts it is, and in the other districts it is taken at fixed periods and the streets thoroughly cleansed as the requirements may suggest. It is necessary to remove refuse in the centre parts, because they have not facilities for storage on account of the property being so close.

2688. Can you state from your actual returns of mortality that the population have benefited by your scavenging system?—I would not like to make any comparison; there is a marked improvement since the operation of the provisions of the Act of 1866 to the town. Within the past three years the health of the town generally has improved. I believe the average death-rate for 10 years ending 1860 was 27 per 1,000; it was 30·5 in the year 1867, 25·5 in the year 1868, and up to April of this year it is 30 per 1,000; but on looking at the registered causes I find bronchitis alone was the cause of 52 deaths in excess of the same period of 1868, and 70 deaths in excess of the same period were caused by pneumonia and pthisis. We have had much cold and wet in the North during this year. These three causes alone make up 3·6 of the entire death-rate for the quarter. A reference to the tables will show how these results compare since the first application of the local registration both with respect to the districts as compared with each other and the borough as a whole.

2689. Can you say that the decrease of mortality is distinctly connected with the parts of the town where the cleansing has been improved?—I have not analysed the returns sufficiently to answer that question with detail results.

2690. Have the corporation established baths and wash-houses?—They have in three instances, at a cost of 20,000*l.*

2691. Are they generally used by the labouring classes?—In the low town they have been used, but not so extensively as the corporation wished and expected.

2692. Is the Common Lodging House Act carried out efficiently?—Very efficiently.

2693. And do your regulations as to slaughter-houses agree with the provisions of the general Act?—They do.

2694. What is your market accommodation?—It is very extensive. Newcastle is the source of supply for the northern coal fields, and there is a very extensive demand made upon the market produce.

2695. Do the corporation employ inspectors for any purposes either to inspect nuisances or to inspect their markets, or to see to the general health of the town in various ways?—They do.

2696. How many inspectors have they?—They have a market inspector at the general market; they have a market inspector at the cattle market with an assistant, and they have an inspector at the foreign cattle market and a fish market inspector; they have two inspectors of nuisances with two assistants; they have two lodging-house inspectors; they have an in-

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spector of provisions, who is assisted by four district men; they have a very complete staff of inspectors, and in those operations they are assisted by the police so far as their observation in the execution of their duties enables them to assist them.

2697. Is your gas supplied to you by a company?—By one private company, who have an Act recently obtained.

2698. What is your burial ground accommodation?—The parochial churchyards were all closed, and the district obtained separate burial ground accommodation; in the aggregate for the four parishes they have 43 acres, besides 18 acres comprised in two general cemeteries.

2699. Do the corporation undertake any hospital regulations either themselves or in connection with the hospitals in the town?—The corporation have provided temporary hospital accommodation in the low town with a view to carry out the requirements of the Act in case of fever epidemics.

2700. What Act do you refer to?—The Sanitary Act of 1866, and in that they have been supplemented by the independent action taken by the board of guardians under the Poor Law. They are at present engaged in building a very large hospital in connection with the Poor Law Administration and independently of both those parties there is a private enterprise, a fever hospital proper, which attends to small-pox and infectious cases under the general medical men of the town.

2701. Do I understand you to say that fever was so chronic in your town that in order to carry out the Sanitary Act the corporation have provided themselves a fever hospital?—A temporary hospital. There was a difficulty in getting a suitable building, but they got an old chapel which was lying empty, and they have fitted it up with very good results. At one time when the fever epidemic was at its height (the fever broke out in the ragged school) some children were removed to that hospital, and 12 were successfully treated without a death; there was no death in the institution.

2702. Is the general hospital accommodation in the town maintained by private subscriptions?—Yes, by private and the corporation subscriptions and a contribution by the board of guardians, who are assessed by the medical officer of the hospital for all pauper patients who are taken to the hospital.

2703. Have you any system of nurses?—There is a system of nurses organized by the committee of the fever hospital.

2704. Is that under any regulations of the corporation?—No.

2705. Did the Sanitary Act of 1866 increase the powers of the corporation with reference to sanitary regulations?—Yes, the corporation by that Act were enabled to go to properties where over-crowding prevailed and they applied a code of regulations to such property.

2706. Have they taken action under such regulations?—Yes, they have.

2707. Can you state any results from those increased powers?—They have obtained a considerable increase in privy and watercloset accommodation for this class of property under that Act, and in several hundred cases they have applied the water supply which that Act gave them the power to compel the owners to attend to; they have registered lodging houses which were not common lodging houses, they have closed rooms in unhealthy districts, and dealt very generally with the smoke nuisance and with nuisances at large, including the provision of branch drains to house property.

2708. Have you completely described in your former answer the organization of your nuisance removal staff?—In addition to the officers which I mentioned the town is divided into sub-districts over which there are foremen or gangers responsible for scavenging and cleansing ashpits, and those men are in daily communication with the inspector of nuisances. Nuisances that are open, that the corporation can remove, the corporation staff daily attend to, and in the case of those that they find the owners of property liable to attend to, they communicate to the inspector of nuisances, who takes magisterial proceedings where necessary. I put in a table showing the actual expense entailed upon the town by cleansing operations of a temporary character, and which must be daily overcome without making advances with permanent works.

(*a*) The Cost from August 1866 to February 1869.	Street Cleansing.	Ashpits.	Street Watering.	Total Cost.
	£	£	£	£
One year to August 1867 -	6,116	5,016	710	11,842
One year to August 1868 -	5,994	4,899	981	11,874
Half year to February 1869 -	2,961	2,417	232	5,610
Total for 2½ years - -	15,071	12,332	1,923	29,326
Average for half year - -	3,014	2,467	384	5,865
Yearly average - - -	6,028	4,934	768	11,730

(*b*) Quantity of Refuse for 4½ Years ending February 1869, in Loads.	Street Sweepings.	Rakings from Roads.	Scuttle Asphits.	Ashpits.*	Total in Loads.	District.	No. of Ashpits.
	Loads.	Loads.	Loads.	Loads.			
One year ending August 1865 - -	9,368	7,762	9,794	12,221	39,145	1	2,621
" " " 1866 - -	9,459	5,245	9,961	28,872	53,537	2	1,039
" " " 1867 - -	9,058	4,644	8,498	58,415	80,615	3	3,888
" " " 1868 - -	10,894	7,680	9,464	52,412	80,450	4	2,112
Half year ending February 1869 - -	5,700	4,960	4,290	20,687	35,637	5	233
Total for 4½ years - -	44,479	30,291	42,007	172,607	289,384	Total -	9,943

Monthly average - -	- 5,358 loads carted away.	
Weekly average - -	- 1,339	do.
Average each working-day -	- 223	do.

* The corporation acquired new powers over ashpit refuse in 1865 which accounts for the sudden and great increase under the head of ashpit cleansing.

2709. Have any difficulties been experienced in the administration of the sanitary law?—Yes, in the new town especially; streets were formed, and as those districts grew up into a town as suburban districts, the streets have been made at the option of private proprietors and vendors of land, the levels were chosen by themselves, and the width of the street and so on, and there has been a difficulty with respect to those streets that already have been completed in districts that had grown up before those powers were conferred.

2710. Have you any suggestions to make for improved legislation in sanitary matters?—Yes. I may first allude to the building regulations, the arrangement of conveniencies, strength of joists, elevations, provisions for preventing fire and the like and the powers over the streets as they are formed and in process of forming, in districts particularly suburban. In the course of time those districts have grown to the town to which they adjoin, and they are gradually growing up in a state of transition, the new authority having to improve them, and take them in their position; in several instances at great cost undoing what has been gradually done, and there seems a necessity for provisions for the districts near to towns not within the jurisdiction of any authority as regards building purposes, the strength of buildings, the levels, and width of streets.

2711. Do you think that the new powers recently obtained are not sufficient upon that point?—Yes, they are not sufficient. I mean districts where no local boards exist, but where the districts will of necessity attach to towns subsequently, and when they are so attached the corporation or the local board will have to undo to a great extent what has been done. That has been the experience of Newcastle in those five outlying townships.

2712. Are there any other suggestions that you wish to make?—With respect to the power to disinfect, the corporation have very fully gone into that. Under the Sanitary Act of 1866 the corporation have provided disinfectants to give the people, they have been advised from time to time where fevers have prevailed, and they have disinfected the premises of those parties, but there is no power given to destroy any class of articles which cannot be disinfected, and we have had difficulties with bedding, for instance, which cannot be safely disinfected except by burning; there is no power to compensate under that Act.

2713. You propose that the public authorities should have power to destroy such things, compensating the owners?—Yes, exercising it discreetly, I think they should have that power.

2714. Have you any other suggestion to make?—Yes, I think that the power to license knackers yards and tripe preparers premises should attach to the same authority as the licenses of slaughter-houses. The knackers yards are licensed by the Court of Quarter Sessions under the old Act of George the Third, and in Newcastle we have no jurisdiction over them, excepting after they are licensed, and as to slaughter-houses there is no power to define in what district the slaughter-houses shall be. There is no prohibitory power for the corporation to say that they shall not be within a certain district of property. The general law provides that slaughter-houses in existence at the time shall be placed on the register, it does not give any power as to subsequent slaughter-houses, excepting that they may be licensed. We have instances at present where slaughter-houses are being placed in the centre of the town. It may be an improper locality, but it is a question whether the authorities have power to prevent them.

2715. Have you power to license them?—Yes.

2716. (*Earl of Romney.*) Then you would have power to refuse a license, would you not?—There would be power to refuse, but it is a question whether it could be sustained on appeal if there were no other reason but the locality.

2717. (*Chairman.*) Are you in your suggestion proposing that the general law should be altered or is it that your local law should be modified?—That the local authority generally should have power to build those slaughter-houses and to define the localities in which they should only be built.

2718. How far does your corporation carry out the Consumption of Smoke Act at Newcastle?—They have to a considerable extent applied the Act of 1853 as amended by the Act of 1866; the Act of 1853 gave the corporation power over smoke nuisances, but the great difficulty that we have is with steam vessels on the river.

2719. Have you any other suggestions to make?—I think that certain building regulations might be defined by the legislature at large; on this subject I have been in conversation with the borough engineer, and he says that in certain instances the option is quite left to the parties, and if the local authority have afterwards to deal with the nuisance arising from it, it entails cost upon the owner of the property and litigation, in many instances, upon the corporation, and he refers to certain trades which might be located as to distance, as to the height of chimney and as to where the boilers should be, and within what distance noisy trades should be from dwelling houses; he says, that, in his opinion, the general law should speak out upon those questions.

2720. Do you agree with him?—I do, and from the experience of the committees I find that the local authorities are quite powerless in many of those matters.

2721. Do you think that those are matters for general legislation rather than for byelaws?—For general legislation, I think, because the byelaws would vary with different towns.

2722. What code of byelaws or what powers of byelaws have your corporation?—They have power under the Act of 1865 to make building byelaws.

2723. Have they carried out their power of making byelaws to any great extent?—They have a code of byelaws which was before the Home Secretary in the year 1866, made under the Act of 1865, upon sanitary matters, street buildings and building clauses generally; but upon those points it is a question how far the law is efficient.

2724. Have the corporation ever been involved in litigation with owners upon such points?—They have; the owners of course have to remedy the defects after the nuisance or inconvenience has been experienced.

2725. What powers should your corporation have to acquire land in case you carry out the system of utilization of sewage upon land?—Perhaps the Sewage Utilization Act of 1865 would be sufficient for that purpose; but as to acquiring land for the deposit of purely towns' refuse, and for sweepings and ashpits' deposits, we have no power to go beyond the borough at present to acquire any land, and to use it as their depôt.

2726. Do you think it desirable that you should have such powers?—I do think so; the corporation have thought of having some land as their depôt where they could take their refuse from time to time and let the farmers have it in the districts, and educate them to use it.

2727. Do you conceive that there is much confusion in the number of statutes existing upon this subject?—Yes; the general laws applying to towns are very numerous and voluminous. A recent edition of the laws affecting health and sanitary affairs gives the text of 15 Acts relating to health, diseases prevention, nuisances, local government, sewage, and kindred subjects; 12 Acts consolidating provisions as to towns, lands, markets, police, loans, bakehouses, &c.; the Public Health and Local Government Supplemental Acts are 49 in number, while the laws treated by the work are affected by not less than 296 Public General Statutes which the author tabulates in the index as being referred to in the text. No lawyer can grasp these enactments save by great research, much less can a man who has his own business pursuits to look after.

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2728. And does that multiplicity of statutes create also a great multiplicity of forms of notices and orders, and various means of carrying them out?—Yes; I brought with me a few of the forms which the law requires our officers to use, and I find that some thousands of forms have to be served in the course of a year by the officers who find nuisances existing, requiring parties to remedy the nuisances; when nuisances are found out, the first step is to give notice with respect to those nuisances being observed, and next to see whether they have been attended to; next to summon in each case; and then the officer has to visit again to see whether the nuisance has been removed, and if not, then the order of the magistrates has to be served, and he has then to go and see whether the magistrate's order has been attended to; those are all cases where there should be no option, but the common nuisance being found, it ought to be removed without any formality or expense to the sanitary body.

2729. Do you think that this question of the multiplicity of Acts prevents people knowing what the law requires?—They do not understand it. They may be anxious to understand it, and to conform to it, but there is great doubt in knowing what is required of them.

2730. Do you think that if the law could be consolidated it would be more efficient, as being better known, and also much more economically carried out?—It would be much more cheaply carried out, and more efficiently. There is great confusion as to the Acts and the application of certain Acts to the authorities.

2731. Has the consolidating of the six local Acts which you have mentioned to us ever been talked of in Newcastle?—It has.

2732. Is that about to be done?—I should say that the next intention of application to Parliament might perhaps lead to that. I would not like to speak for the authorities, but it has been talked of.

2733. Have you considered whether if all the public general Acts on the subject were consolidated, you might dispense with your local Acts, that they might merge in the general provisions for the same purposes?—As regards subjects treated of by the general statutes of the land, I should say yes, but my view, and perhaps the experience of Newcastle justifies it, is that large towns ought to have separate legislation for their own particular requirements.

2734. Taking such general subjects as sewers, gas, drainage, water supply, and the ordinary functions of local government, do you think that a general Act might be framed which would include in its provisions even such large towns as Newcastle?—Yes.

2735. So that a great part of the local government might be provided for under a general Act, leaving only, you think, certain local matters which must still be dealt with by local Acts?—Yes, by large towns.

2736. When you talk of large towns have you any particular limit in your mind as to the sort of sized town you mean?—There are so many towns that are similar in their local circumstances, that I think one could scarcely define a limit arbitrarily. I think that all towns which could really regulate themselves, and where special circumstances seem to require it, ought to have that power.

2737. Are you talking of towns of such a size as would include a great number of towns in the list?—No; I have not a great number in my mind.

2738. Would the exception be in proportion to the population, or from the fact of their being incorporated boroughs?—I should take into consideration as much as possible mixed areas from time to time acquired, the local circumstances of construction or the pursuits of the inhabitants; for instance, a seafaring law would scarcely apply to internal towns.

2739. Do you think that there are many special provisions which must apply only to maritime towns like Newcastle?—I think that there could be regulations for maritime towns, and I think that the Legislature ought to go into the requirements for maritime towns, and define them more clearly than they are at present.

2740. Is the responsibility thrown upon the local authorities as to the storeage of dangerous and explosive products?—That has been thrown upon the corporation of Newcastle by the Petroleum Act and the Gunpowder Act; it is a question whether it ought to attach to the nuisance authority or not, or whether it should be regulated by a distinct enactment of Parliament, considering the interests involved in the trade and the serious consequences for which the local authorities might be made responsible. For instance, in the storeage of petroleum the corporation or local authorities have an option as to the class of regulations they may make for such storeage, and in the instance referred to the corporation have made certain conditions for the licences, but the trade are not satisfied with those conditions, and they seek the Home Office under the powers of the Act to revise the conditions imposed, by which means the matter remains yet in uncertainty and risk.

2741. In case of any dispute as to their obligations in those matters, what mode of arbitration would you adopt?—There are certain matters that could be arranged by a court of arbitration, a common sense court locally acquainted with the circumstances in dispute without having recourse to the law. I have in my mind some instances where we have failed to reach parties by litigation, but where, if there had been the power to bring the two parties together, and there was a dispute between them, it might have been easily arranged. There were some things required, either in the old town which the corporation had allowed to grow up from time to time, or in the new town for which they were not responsible, and this local authority or court with arbitrative powers might have investigated the case and come to a decision which might have been enforced or appealed against.

2742. That is your suggestion, that the law should provide some local board of arbitrament?—Yes; and I think that that would be attended with great good in towns where there are so many interests involved, and where at present you have to inflict a penalty for offences which may be innocently committed, or in ignorance, and where the corporation have certain requirements that the law has not met, they must either go to Parliament at immense expense to redress the evils, or institute legal proceedings at great expense, it may be, only to meet with defeat.

2743. Do you think that legal expenses might be reduced by a more easy process?—I do. I have seen that in Newcastle particularly within my time. If an improvement is required, I will take the great explosion in 1854, when the town was laid quite waste by a fire, the corporation had to come to Parliament and schedule the properties which they wished to buy, and of course the Lands Clauses Consolidation Act and the general law of the land was applied with respect to the mode of purchase, a very expensive machinery indeed; whereas if the corporation had possessed an opportunity of obtaining a loan wherewith to pay for the purchase of the property without letting people know by depositing books of reference and showing to Parliament that they require this property, it would have been much more economical, because the present practice opens the door to so much cost in the long run.

2744. (*Mr. Powell.*) I see that there was an old borough of Newcastle-on-Tyne prior to 1832, and that there were added to it five townships in that year. Then by your local Act, 1853, the corporation acquired power for certain purposes therein described over those five townships as well as over the rest of the borough, and the extension that you refer to was only an extension within the area of the authority of the corporation?—That was so.

2745. (*Earl of Ducie.*) Did I understand you to say that there is a difference in the treatment of knackers yards and slaughter houses by the present sanitary regulations?—I have found it so. The act

of George the Third called The Horse Stealing Act, to put down the practice of horse stealing, required that the justices should grant a licence, and that there should be a registration of the colour of the animals and certain other peculiarities; but the slaughter houses are licensed by a local act.

2746. (*Mr. Hibbert.*) I understood you to say that in one of your rates the owner has to repay the occupier one fourth of the rate. What kind of rate is that?—That is the improvement rate for benefiting the town in the formation of new streets and the general rate for general street purposes, under the municipal law generally.

2747. How long has that been in operation?—Since the year 1865.

2748. Do you know whether the same law is in operation anywhere else?—I do not. We have formerly had it in Newcastle in the proportion of about one fourth of the general rate, but not the improvement rate. We had it one half of the sewers rate and one half the paving and flagging rates, but the other rates and the improvement rate were exclusively tenants rates.

2749. Is this satisfactory to the people of Newcastle?—It acts very well as far as the collection of the rates is concerned; the tenants pay their rates promptly at the municipal office, and arrange the deductions from their landlords when they pay their rent, thus throwing a share of the cost of permanent improvements upon property, and I think properly so.

2750. Have you borrowed large sums of money for improvement purposes?—Yes, from time to time we have; but there is a class of improvements which I have looked financially into at Newcastle, and I have gone very fully into the question. We have no relief from borrowed money with regard to sewerage works and the maintenance of paving and flagging and works of a permanent sanitary character, which is entirely out of the income or the rates in large towns, and I would direct attention to the cost to the town under this head as shown in the following table:—

EXPENDITURE out of Rates and Borough Fund on recent permanent Sanitary Works for which no deferred charge has been fixed upon Posterity.

Period of Charge.	Sewering out of Rate.	Paving and Flagging out of Rate.	Formation of Sewers, Pavement, and Flagging at Cost of Owners of Property.	Streets, Roads, and Lanes, making, repairing, &c.	Upholding the Township Roads.	Total of the foregoing.
	£	£	£	£	£	£
From the year 1846 - -	46,661	—	—	—	—	—
„ „ 1837 - -	—	80,176	—	—	—	—
„ „ 1846 - -	—	—	28,767	—	—	—
„ „ 1835 - -	—	—	—	221,436	—	—
„ „ 1853 - -	—	—	—	—	20,943	—
To the month of August 1865	46,661	80,176	28,767	242,379	—	397,983
„ „ „ 1866	7,164	10,821	3,476	5,658	—	27,119
„ „ „ 1867	4,649	8,143	18,404	5,107	—	36,303
„ „ „ 1868	5,095	6,014	16,775	7,958	—	35,842
Half-year ending Feb. 1869	1,426	2,560	6,881	1,892	Half-year.	12,759
Total up to February 1869	£64,995	£107,714	£74,303	£262,994	—	£510,006

N.B.—The above expenditure does not include new streets and widenings of streets, made under powers of local Acts of Parliament, nor does it include the accounts for private drains, or other street works, at the optional cost of owners of property.

2751. Have you not carried out those improvements by means of loans?—No, not by loans. I should say that about 65,000*l.* will have been expended in making drains which will be permanently useful to posterity without any charge being fixed on posterity, and the same applies to pavement and flagging, and so on since the year 1853; all those operations have very extensively gone on in both the old town and the new town, and they have been entirely paid out of income.

2752. Have you found any difficulty in obtaining loans?—Under the local Acts we have no power to borrow on the security of those rates. At first the maximum rate was fixed at a low amount, and it was found to be insufficient for the demands made upon it.

2753. Have you really no power to borrow money for any sanitary purposes?—No, we have no power to borrow on the security of the sanitary rates or the general rate; we have power to borrow under the improvement rate, but the improvement rate applies to the formation of new streets and acquiring power to widen our throughfares.

2754. Have you borrowed any money for waterworks?—No, the water supply is in the hands of a private company and the gasworks as well.

2755. What is the amount of the debt which you owe?—

	£
The old bond and other debts and obligations of the former corporation due at the passing of the Municipal Act for which the new corporation became liable	150,000
Loans for street works obtained under the Act of 1837 - - - - - -	70,000
Under that of 1841 a further sum of -	30,000
Under the Act of 1850 for the high level bridge approaches - - - - -	20,000
And for remodelling the site of the great fire and explosion under the 1855 Act -	60,000
Making a total of - -	£330,000

Of these debts and obligations there now remains undischarged a sum of 174,000*l.* The Act of 1865 gave power to borrow 150,000*l.* for new streets, and I believe that it is almost all borrowed.

2756. In what way did you borrow it?—50,000*l.* was borrowed from the Loan Commissioners and the remainder from private parties.

2757. Have you anything to suggest with reference to the mode of borrowing money; how is that money to be paid to the Loan Commissioners?—I think the rate of interest is high.

2758. What is the rate of interest?—Five per cent.

2759. In what mode is it repaid?—It is payable by fixed instalments. We have a clause in the Act that the amount of borrowed money should be annually curtailed by one fortieth part. Lord Redesdale gave us power to have that first loan extinguished in 40 years; that each year one fortieth part of the amount should be paid off.

2760. That is really for a sinking fund, is it not?—No, we have no sinking fund; it amounts to the same thing, but it is preferable to a sinking fund because the per-centage to be received from the sinking fund would be less than we pay the bondholders, one or one and a half per cent.

2761. You said that there were two townships existing outside the municipal borough of Newcastle which were not included, and which were under the board of guardians. In making the authority to carry out sanitary matters what body should you suggest as the best body for carrying them out in places like those two townships?—To a large extent I think that the general Parliament ought to be responsible for those townships. The land is chiefly in outlying districts and comparatively of little value in the early stages of building, and the law should define the width of streets and open spaces

and crofts or fronts, and that would give no option to the vendors.

2762. Who would you make the local authority to see that the proper sanitary provisions were carried out?—I think the town authority, or the public authority nearest to those subordinate districts, because they will ultimately be part of themselves, and they would be in a manner looking after the districts adjoining while they were in growth.

2763. Then you mean that you would put them under the authority of the municipal borough?—Not as regards rating or incorporation until they were sufficiently identified with the town; but I think that they should be left to the general law, with the surveillance of the authority adjoining, because in course of time they will have to incur the responsibility of their management.

2764. Have you any view as to what should be the authority in rural districts?—I cannot say that I have thought it over, and therefore I would not like to express an opinion upon it, but I would submit that rural districts should as well be regulated as regards the width of streets and similar fixed requirements tending alike to sanitary reform and the convenience of the populace by Parliament. Parliament should legislate for the formation of districts as regards certain things where there should be no option. I mean where past experience has pointedly established a state of things to be the best for all.

2765. Do you mean that you would make the same powers to be applicable to rural districts as are applicable to towns?—Not so stringent, nor of such an extreme character, but I think that the country generally should be informed as regards street formation with the consent of the Government of the country; that the Government should take cognizance of the formation of villages as regards certain defined requirements. I may refer on that subject to the General Highway Act. The General Highway Act of course gives the approaches to the town of a certain defined width, but all transverse streets leading to those main arterial roads are formed at present at the option of the owners of the land; they may be defective in level, they may be without drainage, they may be curtailed in width. The law of the land does not, as far as I find, legislate upon that subject, and when those new districts are added to towns the towns take the new districts with those defects, and they have to be brought up and arranged at a wasteful cost.

2766. Are not your views more with regard to districts growing up outside the large towns of the country?—No; I have noticed by casual observation the formation of villages and of large hamlets, and I think that there should be some directory power taking cognizance of those little irregularities, because when the population grows and if they make any improvements they have to do it at great expense, whereas if the law were defined the towns would grow according to their size on defined principles of government and formation.

2767. (*Sir Thomas Watson.*) You have mentioned that the use of ashpits is very extensive in Newcastle. According to your knowledge is the use of those pits effectual in abating or keeping in check the nuisance and noisomeness of the matter for which they are intended?—I think that with a little additional power over the ashpits they would add materially to the comfort of the town, and considerably diminish the expense if the ashpits were covered in and ventilated. There seems to be no power to cover ashpits in. If they were covered in from the sun and the wet, they would be much better.

2768. How often are they emptied?—At present there is no defined time. If a street presents two or three accumulations that are offensive the nuisance staff advises the corporation staff, and the whole of that street is cleaned out at once. We send half a dozen carts, and get half a dozen cart hands, taking away the accumulations from the full ashpits, and also from those that are partially full.

2769. Would the soil again continue to accumulate until some fresh complaint was made of the nuisance?—No; there is a register at the police station by means of which the parties aggrieved by the deposits—I mean by the tenants who make the deposits,—have a daily opportunity of communicating with the sanitary staff as to the removal. Each police station keeps a register of complaints, and those are daily attended to by the corporation sanitary staff; the police inspector at the station records it as an offence.

2770. Has there been any introduction of the earth closet system at Newcastle?—I have heard of its private application in the suburbs by a gentleman connected with the town. They are building a new wing to the prison, and they have made provision for introducing earth-closets to the male wing now in course of erection, but they have not had experience of it there.

2771. (*Dr. Acland.*) Could you give us any reason why you prefer being under a local Act to being under the general Act?—Perhaps I am rather expressing the views of the government of the town, but they think that from local circumstances and local knowledge they acquire information which is useful in the administration by the governing body.

2772. I understand you to say that you lose something of power—for instance, borrowing power—by being under the local Act?—That is so.

2773. Then you would easily remedy those evils, would you not, by putting yourselves under the general Act?—Yes.

2774. Are all the sanitary affairs of the town under the corporation?—Yes; but the guardians act as well in the case of cholera.

2775. Have you a health officer?—There is no health officer, properly so called.

2776. Could you say that you consider such an officer unnecessary?—From the mode in which the health matters in Newcastle are attended to at present I should say that it is a very efficient health administration by the health officers of the Board of Guardians, each of whom is as it were the health officer of his district, who confers with the sanitary authorities within his district, and they are in weekly contact with the Health Committee and furnish returns to them, and in some instances give advice where they find that there is a necessity for action.

2777. Then in fact I understand that you look to the organization of the poor law for a great part of your sanitary administration?—That is so; they are very closely connected through the law of relief to the parties in those low neighbourhoods, because they provide the medical attendants in sickness with the disinfection and the remedial measures that are found necessary; they are very much interwoven, and they could scarcely be disconnected; in fact it is not attempted to disconnect them, for at Newcastle the Board of Guardians and the corporation work as it were as one commission.

2778. So that you do find that the Poor Law Board at this moment provides you with information as to the condition of disease throughout your whole area? We are very much indebted to their machinery for information. As to the register of deaths and their causes, and as to the prevalence of fever in the poor law district, the medical officers keep us advised from time to time, and we have access to their books and the inspector disinfects the localities where there is disease prevalent. We should be quite ignorant of that excepting through a very close connexion with the poor law officials.

2779. The Registrar General's officers, the district registrars, keep the registry of deaths?—Yes; and by arrangement with the head quarters we get it weekly from the five registration officers.

2780. You have a weekly register of disease, have you not?—We have a register of disease.

2781. Do you know whether that is common in great towns?—I believe that it is not common.

2782. Could you tell the Commission in what way the register of disease is kept?—Yes.

2783. Could you hand in a form that you use at Newcastle in the registration of disease?—I can; we

make a classification of disease, as to zymotic, constitutional, local, and other causes of death adopted by the Registrar General, and each death in the borough is classified as to the street and district; and according to that classification the results are tabulated fortnightly, quarterly, and annually, and the districts are compared with each other, and the borough compared from year to year, with itself and other towns; that has been in effect since the year 1866.

2784. Do you print and publish it?—It is for the information of the Public Health Committee and its officers; it is not published.

2785. You spoke, did you not, of the registration of disease as well as of death?—The medical officers tell us how disease is going on in their districts, but the registrar's subordinate officers only give us the deaths, and the locality of the deaths.

2786. But is there not a registration of disease as well as a registration of deaths in Newcastle?—There is a register of disease, but that is in connexion with the Medical Society.

2787. Do they print the returns of disease?—They do.

2788. Could you hand in some of their tables?—I will do so. (See *Appendix*, p. xiv.)

2789. Should you be able to tell the Commission over what area the registration of disease is kept?—Not of my own knowledge; we have no power as a local authority of conferring with private medical practitioners as to the disease within the district; the Medical Society have that power, and I believe it is carried to good account.

2790. You said that the corporation have provided hospital accommodation for fever cases; do I understand that that is done under the provisions of the Sanitary Act of 1866?—Yes, but only to a limited extent; it was as a sort of local reserve for the low town, where the medical practitioners might isolate cases, and in several instances the disease was stamped out by that isolation.

2791. Then you do use such separate clauses of the Sanitary Act as you think fit?—As I understand the Sanitary Act of 1866 applies to all the towns in the kingdom.

2792. Therefore you can use all such clauses of the imperial Acts if you desire to do so?—Yes.

2793. You are not confined to the powers under your local Acts?—No, not at all, and under that Act of 1866 the corporation have set to work very earnestly.

2794. You seem to have carried the system of registration of disease and of intercourse with the Poor Law authorities to a very great extent; may I ask whether you consider that you have power to utilize or to subscribe to the existing civil hospitals to any extent you please?—I consider that the corporation have the power to subscribe to those hospitals out of any surplus income, or their general rates, under the Sanitary Act.

2795. Was there not a discussion at Newcastle as to the relation of the subscription or fever hospital to the general administration of the town by the corporation?—Yes, by a joint committee.

2796. Could you tell the Commission what the nature of that discussion was?—I may explain that the fever hospital of the town is built upon corporation property, with a long lease, and it was in contemplation to extend the area of that hospital. The fever authorities, many of whom are in the council, met the corporation with the view to transferring the hospital to the council, and the result of the interview was that the corporation extended the holding of the hospital to the trustees, by conveying to them the reversion and selling them a piece of ground adjoining on favourable terms, in order to extend the hospital and continue its management under the medical staff of the physicians of the dispensary and of the fever hospital. To this step the Lords of Her Majesty's Treasury, and their surveyor, were assenting parties under the Municipal Act of 1835 regulating the sale of land.

2797. But the point is that the corporation as well as the guardians have the power to provide hospital accommodation for epidemics?—They have the power, and I take it that if the cholera were to break out in Newcastle the guardians would have to provide hospital accommodation and the medical treatment, but if an epidemic of fever fell out those obligations would attach to the executive of the corporation.

2798. If I catch your meaning rightly it is, that in an epidemic of fever one authority would have the management of the town, and in an epidemic of cholera another?—Yes, that is so, as far as I am able to ascertain.

2799. What would be your relation under the Diseases Prevention Act to the Privy Council under those circumstances?—The Privy Council would have all the power over the area of the corporation which the Act of Parliament gives them over the same area if it were administered by the board of guardians, and whatever powers they had in reaching them would reach us.

2800. Have you control over the water supply?—The Sanitary Act of 1866 gives power to provide a water supply, and the water supply of Newcastle is not further under the control of the corporation than it is where the general law of the land applicable to water companies is in force.

2801. Could they take water from the Tyne without your consent?—No, there is a prohibitory clause in the company's private Act to the effect that the corporation should have a veto in certain cases.

2802. You spoke just now of the rural districts, has your attention ever been drawn to the condition of the fishing stations in your neighbourhood?—The corporation own salmon fisheries immediately abreast the town.

2803. I meant specially the large herring fisheries?—Yes, I know the district well, the seaside villages are well known to me.

2804. Such a place for instance as North Sunderland?—Yes, that I know very well.

2805. When part of your population goes at the period of the great fisheries to places of that kind, are they under any kind of sanitary supervision?—I should say there would be the vestry authority within that district.

2806. Do you suppose really that the sanitary law of the country is now such that what I may call summer populations of that kind are efficiently cared for in respect of water or lodging, or do they get into districts where they may be quite unprovided for?—As I observed, with respect to provision in such districts as that, I think that the law of the land is quiet.

2807. And therefore you suggest in connection with what you said just now in answer to some previous questions, that there should be a general sanitary law compulsory in certain particulars over every district?—I would certainly advocate that, because from the experience of Newcastle we have had to pay so very smartly for remodelling outlying districts where they have been left too long to themselves, not to speak of the inconvenience to which the inhabitants are subjected in the interim.

2808. It is the fact, is it not, that in your part of the country dense and considerable populations spring up suddenly without any sanitary provision whatsoever?—Yes, Newcastle has quite outgrown itself.

2809. And then afterwards you have had to remedy evils which might have been prevented?—Yes, which have been allowed to accumulate without any repression.

2810. And which, with reasonable supervision from some central authority, might all have been prevented?—Yes, by distinct enactments, speaking out and saying what should be, I certainly think that the accumulation of evils would be prevented, and mistakes would not be made.

2811. Do you take cognizance of diseased foods in your office of health authority?—We have an inspector of provisions and four assistants; and on that subject I

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find that the law of the land is deficient. I do not know that there is any power to treat the milk of a diseased animal, or to deal with animals in the district beyond ours. If they come within our district we can deal with them very summarily; but as to closing the town from surreptitious importation of unhealthy animals for human food the law seems to be deficient.

2812. Have you any public analyst, or any laboratory for such investigations?—We have an analyst who acts for the corporation when his services are required; but he is not appointed with any functions attaching to food. I cannot say that he has been employed as regards food; he has, as regards the gas and water supply, and the strength of inflammable products; he is called into requisition whenever his services are necessary.

2813. You have no power over pharmacists, or chemists or druggists?—We have not. The law speaks out when it thinks that they should be regulated.

2814. Do you inspect the condition of your colliers in the port?—No.

2815. Has your attention been drawn to the health conditions of the Mercantile Marine generally in the Tyne?—Yes, we have opportunities of going on board the vessels, and, if disease should be on them, the Custom authorities or the harbour master, who is an officer of the corporation, communicates with the lodging house inspector, and we have very frequently seamen removed inland for isolation from the remainder of the crew, and treatment for zymotic disease or other illness. The infirmary, for instance, and the fever hospital treat all such cases as are within the jurisdiction of Newcastle, and I know that the operation of those institutions extends to the confines of the port as a port.

2816. But with regard to arrangements conducive to the health of your seamen, have you adequate power over the coasting and other vessels?—I think not; and I think that the ports where passengers and seamen come should be regulated by the law more clearly than they are at present, considering the grave issue at stake.

2817. If you know that any of your coasting vessels are very filthy and in a really dangerous condition from that cause, have you any power as a local authority to require them to whitewash, for instance, or cleanse them?—The Sanitary Act, 1866, applies to nuisances in such vessels. There is a local marine board, but what the functions of the local marine board may be with respect to that I am unable to answer. I know of no authority that the corporation have over those vessels beyond what is referred to.

2818. Has the question of the introduction of the Contagious Diseases Act been discussed by your corporation?—It has been discussed, and it has been before the committee of the corporation that are charged with sanitary matters; and, if I recollect rightly, on looking into the law it was found that certain towns were named in the Act to which only the provisions of the Act could be applied.

2819. They are military and naval stations elucxsively, are they not?—Yes.

2820. Is there any desire to extend the provisions of the Act to Newcastle?—There is a movement being made in the town, and I believe that there has been a town's meeting, in which the medical gentlemen of the town have taken a very active part in order to have those provisions applied. I believe that they have sought the assistance of Parliament by petition to attain that end.

2821. Do you think that that arises from a theoretical opinion that it is desirable, or does it arise from a knowledge of the injury to your population from syphilitic diseases?—I cannot follow you there.

2822. (*Mr. Bircham.*) What is the proportion of houses supplied with waterclosets and those having privies in Newcastle?—The number of waterclosets in Newcastle supplied by the water company in 1865, before the Sanitary Act of 1866 was passed, was 4,039; since that date the nuisance officers have dealt with the owners of property, and there are now 6,251 waterclosets within these two years.

2823. What residuum of houses are supplied with privies?—I cannot state; our record is of the ash-pits for house refuse generally, with which the privies are connected.

2824. When you say that the authorities have brought about waterclosets to the extent of 2,000, under what Act has this been done?—Under the regulations made by virtue of the Sanitary Act of 1866 which gives power to deal with property when those sanitary provisions are found to be defective.

2825. And to force them to bring a water supply where needed?—Yes; and with respect to the supply of water to tenants we have been equally successful. The number of families living in tenement property which had water laid on through the operations of the inspector of nuisances between November 1866 and December 1867 was 914, representing probably 4,570 persons, and those reside in some of the worst parts of the town.

2826. Do you consider the provisions of the Sanitary Act of 1866 sufficient for the purpose of correcting, as far as you desire it, the absence of waterclosets?—I think so. I think that they are very complete, and have been of very great service at Newcastle. Up to that date our powers did not extend to require the construction of waterclosets, but were confined to privies. Perhaps earth closets might be admissible where the localities are suitable, and the clause of the Act extended to meet it.

2827. Have you any small tenements without water?—I should say not at present. There are some localities where the corporation provide a supply by having a public pant in the middle of a property, but the rule should be that property owners should give a water supply to small tenants.

2828. Has the operation of private companies supplying Newcastle with water been generally satisfactory?—Of late years it has been very successful. The daily supply of water to Newcastle and Gateshead, the adjoining borough, is about 6,000,000 gallons, one fourth of which is consumed by manufacturers. They have a storage at present of 530,000,000 gallons, to which they are about to add 600,000,000 more.

2829. Is it a gravitation scheme?—Yes.

2830. Whence is the water drawn?—From Hallindon, North Dean, and Whittledean.

2831. Do you know generally what the expenditure of the water company has been on capital account?—It has been beyond the average of other boroughs, by having to deal with previous water companies. I do not know the amount.

2832. What is the ultimate disposal of the sewage of the town?—It reaches the common drains and goes to the river.

2833. Did I understand you that there was a difficulty in procuring land for the purpose of depositing dry fœcal matter or the dry manure arising in the town?—I can scarcely say that we have experienced any difficulty. There is a large agricultural district in Newcastle, and we have been able by arrangements with the freemen and tenant farmers to get depôts; but if Newcastle had to look beyond its own confines, I do not think it could acquire land beyond its district. The authorities have had it in contemplation to make an outlying depôt for farm produce where the absence of manure would perhaps enable them to sell at better rates.

2834. Would you suggest the necessity of any compulsory power to acquire land for such purposes?—I would. I think that where a borough is confined they should have power to acquire land removed from the population by an inexpensive machinery.

2835. You suggested that in immediate proximity to large towns and also in more distant districts, building regulations in order to anticipate bad building or the improper location of buildings would be desirable?—I certainly think so.

2836. Is it necessary in your judgment that that should be made statute law, or that it might be a byelaw authorized by statute of the local authority?—I would have it defined by a statute where there would be no option; but certain facts ascertained by the government should be applied to different classes of towns, without any option as to the width of streets and improving the sanitary accommodation.

2837. But I understand you that you would carry that into quite rural districts, where at the moment a town was not anticipated, but where a town might grow up?—I think that there could be sufficient discrimination between districts near to large towns which would in the course of time be part of a large system, and purely agricultural districts, which the past history of the country would preclude from ever being large towns, or anything more than big villages, at least for a series of years.

2838. Would not there be a difficulty in fixing that by statute. Would it not be better to leave it to regulation by some local or central authority?—You would then have an opportunity for the local authorities to be indifferent to it.

2839. The registration of disease as distinguished from the registration of death in Newcastle is founded upon private and voluntary sources wholly?—Entirely so, as regards disease.

2840. (*Mr. Powell.*) You stated in answer to a previous question that there should be some discrimination as to the selection of those outlying districts, who would exercise that discrimination according to your view?—The authorities of the town who would subsequently be closely in contact with those outlying districts.

2841. And how would you deal with the matter of representation; you would not give a town authority over a district which was not in any way represented?—Certainly not. I think that they should have a voice.

2842. Have you considered how that might be arranged?—Yes, I think that the requirements of the town with respect to a suburban district should be stated, and that the protest or views of the suburban district might also be stated, and that there should be a judgment between them by a friendly reference, fixed and recognized by the law.

2843. But you would not leave it in the hands of the corporation to exercise this authority—No, not arbitrarily over a district.

2844. Would you leave it in the hands of the Home Secretary to decide?—I think he would be a proper person to decide.

2845. In answer to another question you stated some points with reference to the maritime population as to which you think the Acts ought to be strengthened; are there any other matters on which you have to make any suggestion as showing what extraordinary powers ought to be conferred on the local authority where seaports are concerned?—I think that the comfort of the population in ships, as regards lodging accommodation, because they spend their lives there, ought to be within the jurisdiction of the corporation as far as the owners of vessels are concerned. I do not speak from any facts which I have noticed in vessels, but I think, considering the interests involved, the corporation ought to have jurisdiction as regards their lodging on land. Coming from countries infected with epidemic disease, they incur the risk of endangering the health of the entire country.

2846. Has it ever occurred to you whether it would be feasible or in any way desirable to give the local authorities in towns, where there were a considerable number of emigrants or the like, power to erect houses of refuge for them, where they might be received and attended to with or without some small payment without their being pauperised?—I cannot say that I have noticed that, on account of our not having had much opportunity; we have a house of refuge. I think His Grace the Duke of Northumberland made very extensive provision for that; but I may notice one point as regards emigrants, that we have had smallpox imported at Newcastle, by an emigrant vessel bringing parties passing through the town, we had it introduced into the common lodging houses, which are accessible to seamen ashore.

2847. You made some complaint that the law was not strong enough as to covering privies and the like, I presume that your answer referred to your local Act alone and had no reference to the provisions of the public health Act upon that subject?—Quite so, it is a laches on the part of the byelaw, I think that we ought to cover ash pits and privies by a byelaw; but middens to houses in the country should be under some regulation as well, especially when near public roadways.

2848. Will you state shortly the arrangements at Gateshead as to the discharge of sewage into the river?—In general terms I believe it is the same as at Newcastle; it is by arterial drainage.

2849. Are there not further improvements contemplated at Newcastle which are designed chiefly from mercantile considerations, but which will, if carried out, effect important sanitary reforms in certain districts?—Yes, particularly the deep water quay scheme, which will open out the waterside property.

2850. (*Mr. Cave.*) I think you stated that there was no harbour authority generally on the Tyne?—In sanitary matters no; there is, however, a conservancy commission for river objects.

2851. Supposing there was an outbreak of epidemic, cholera for instance, on board ships in the port of Newcastle, what would be the course of the local authorities?—I presume it would be the authority where the vessel was lying athwart. Whatever shore was nearest to the vessel the authority of that place would be the authority, but it might happen that the vessel was midway down the river opposite to an agricultural shore, where there would be a difficulty in finding any authority responsible.

2852. You are aware, are you not, that in case of water opposite an agricultural shore the justices have the same authority as they would have on the shore?—Yes. I referred to the justices of counties where there were no towns with jurisdictions, and to the increased number of authorities in our immediate port.

2853. We will confine ourselves to the port of Newcastle, and to that part which is recognized to be within your port; what would be the course of the local authorities in case of an outbreak of disease among the shipping?—I can state what course we did pursue when cholera was threatened. The then local authority issued a notice calling attention to certain provisions which they had made in naming medical officers who would treat any disease of the character you refer to, and they placed themselves in communication with the customs authorities to know whether there was any necessity for their surveillance, and they also placed themselves in communication with the Poor Law guardians, who had a medical staff, in order that the whole of those three authorities might act in concert, the Customs authority, the Poor Law authority, and the corporation authority, and the corporation named medical gentlemen in certain districts which were conveniently situated where advice could be had, and where they might have an opportunity of treating any case that was presented; the same course was pursued by the Trinity House who appointed medical officers to attend to the sailors and waterside population of the entire river.

2854. What was their next proceeding?—Very fortunately there was no occasion for further proceeding, the disease disappeared.

2855. Do you know whether they would have power for enforcing arrangements to prevent an outbreak of cholera, such as stationing vessels in particular parts or preventing refuse being thrown into particular parts of the port; is there any power to make such regulations?—The conservancy board have power over deposits in the port, the corpora-

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tion of Newcastle has none, and as to the position of vessels I think the quarantine law is the only power at present.

2856. The quarantine law has to be put in force, has it not, by application to the Privy Council?—It is so, and an order is issued by the Privy Council.

2857. The conservancy board have power over deposits in the river; but is not that with regard to preventing obstructions to the navigation rather than for sanitary purposes?—Yes.

2858. Would the conservancy board pay any attention to an application made to them on sanitary grounds?—Not of necessity; but I think there would be that consideration to the necessity of the case that they would immediately place themselves in communication with some authority.

2859. Have they any legal authority to interfere?—I am not aware of any.

2860. Then in fact there is an absence of sanitary authority in the port as a port?—Yes, as a port there is.

2861. You must have a conjunction and agreement between the several authorities, and even then you find it difficult to carry out sanitary arrangements?—I find that there has been a difficulty in arriving at a conclusion satisfactory to all the authorities in the event of any combined action being necessary.

2862. Would the nuisance authority have sufficient power in Newcastle under the Act of 1866 to carry out any sanitary arrangements such as those you have described?—I should say within the port of Newcastle there would be no difficulty in the inspector of nuisances taking cognizance of vessels; but what I refer to is combined action for the river as a whole.

2863. Would the nuisance authority go on board ships and inspect the arrangements for the health of the seamen?—No; I do not think so; I would rather expect that their authority lay on the land, and that the floating population is under the jurisdiction of some other authority.

2864. Do you know in what way the Act of the 30th and 31st of Victoria, the Act of 1867 which regulates the accommodation of seamen on board ship with regard to health, is carried out in Newcastle?—I do not.

2865. Have you a local marine board in Newcastle?—We have a local marine board.

2866. Do you happen to know whether the local marine board have appointed medical inspectors to see whether seamen are in a proper state of health before they embark?—The Local Marine Board have appointed a surgeon to examine the men when requested by the owner or captain.

2867. But the chief deficiency that you have to complain of with regard to sanitary arrangements in the port of Newcastle you would confine simply to the absence of united authority over the whole of the river?—Yes; I think it is desirable that where the port is so much of the nature of a town, and the interests are so common, there should be some board having concurrent jurisdiction over all defined authorities.

2868. But you think with regard to those vessels which lie absolutely within the jurisdiction of the port of Newcastle the sanitary powers are sufficient?—I think the sanitary powers between the local marine board and the nuisance authority would apply to the vessels quite within that district as far as being in close contact with the town.

2869. But you have no experience of those powers having been put into execution?—No; I have no experience of that, except in the case of emergency which was put to me.

2870. (*Earl of Romney.*) With reference to what you said when you detailed to us the course of proceeding in order to stay a particular nuisance, you set out from the serving the notice in the first instance until the hearing before the justices and the order, how many Acts are in operation to do all that?—That would depend first of all upon what nuisance it was.

2871. Take any one case where you have to proceed under various Acts?—I ought to do that with diffidence, as I am not able to refer to the law so definitely off-hand.

2872. Is your own Act of 1853 insufficient for doing all those things?—No, not insufficient, we get at it somehow or other, either by our own powers or the general law; but the process is too cumbersome. To remedy this, in letting corporation property, we make cleanliness one of the conditions of tenancy in our form of agreement.

2873. In what way is it cumbersome?—We first of all have to observe a defect by the officer before he can take any action, then he has to give notice that he has observed it and it must be redressed; he has then to see whether it has been redressed, and if not he has to give information to the magistrates, then a summons must issue and before the hearing he must see whether it has been redressed, and with respect to a certain class of nuisances of that kind I think that the statute should speak out and say that when observed it should immediately be penal.

2874. Is it not already penal, and is not that course of proceeding necessary in order to afford the party opportunity to know when he is to appear and answer the charge made against him?—Yes, I think he must have that opportunity, but we have so many notices, as will be observed from the return I produce.

RETURN showing the action taken by the Sanitary Staff of Newcastle-upon-Tyne (with especial reference to the Preliminary Proceedings before the Laws can be enforced for Nuisance Removals) in the six years ending August 1868.

Character of Offence for which the Law was applied.	2 Years August 1864.	2 Years August 1866.	2 Years August 1868.
Rooms unfit for human habitation	29	517	424
Rooms whitewashed and purified	2,230	4,993	3,358
Yards, staircases, and passages cleansed	386	608	323
Privies and ashpits cleansed	3,059	4,103	*890
Drains and gutters cleansed	415	404	348
Stagnant pools and offensive accumulations removed	937	704	1,289
Removal of swine	738	717	107
Offensive manufactories	40	165	35
Water-closets cleansed	117	332	111
Smoke prevention	160	6	243
Repairs to water spouts	323	47	415
For supply of water to tenements	—	—	741
Defective water-closets and privies	—	41	546

* This duty being now performed by the corporation staff, accounts for the comparative decrease in the number of these accumulations since 1865–6.

2875. All that you object to is the course of proceeding?—Yes.

2876. Not to any defect in the law?—No, I think we do reach the nuisance.

2877. You have complained with regard to slaughter houses being started up in the middle of the town. If I understand you rightly, since the year 1853 no slaughter houses can be started without the authority of the corporation?—Yes, that is so, but I refer to the old town, the ancient prescriptive town in which those things have gone on from time out of mind; there have been always shambles in certain localities, and they continue. The Act provided that whatever existed should be licensed.

2878. But ever since the year 1853 there has been full power to stop any new slaughter house being erected or being carried on, because it cannot be done without a licence, is not that so?—As regards Newcastle it has not been in operation since 1853.

2879. But that has been the law under your local Act since 1853, has it not?—There was a power in the Act of 1853 over slaughter houses, but all then in existence were to be taken as granted.

2880. But with regard to any new ones they can only be set up under a licence?—Yes, that is so.

2881. Then as they cannot be started without a licence, it is within the power of the authority who

grant the licence to refuse it, and then no new slaughter house can be carried on?—The authorities have been diffident in saying that they would refuse a licence for the simple reason of position with respect to houses.

2882. That is like the case of public houses, is it not?—Yes.

2883. You have stated that it never came to your knowledge that anyone complained about the state of the river, as to any nuisance of smell?—Not at Newcastle.

2884. There are but few waterclosets in Newcastle at present, are there not?—But few, comparatively speaking.

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2885. Therefore very little of the fœcal matter goes into the river?—Of the properly offensive matter I should say so. Most of that is carried away from the ash-pits and privies.

2886. Is there a tendency for waterclosets to increase or not?—It is intended that they should increase.

2887. And being so increased they will run into the main sewer, and from the main sewer into the river?—Quite so.

2888. And then that offensive matter will come up and down with every tide?—Yes, as I before explained.

The witness withdrew.

(17.) Cuthbert William Johnson, Esq., examined.

C. W. Johnson, Esq.

2889. (*Chairman.*) You are the chairman of the Croydon Board of Health, are you not?—I am.

2890. Was not Croydon one of the first places to which the Public Health Act of 1848 applied?—It was. It was in the first confirmatory Act.

2891. And Croydon afterwards adopted the Local Government Act of 1858, did it not?—Yes.

2892. What is the extent of the district under the jurisdiction of your local board?—The entire parish; about 10,000 acres.

2893. What is the population?—The population is now nearly 60,000.

2894. Is not Croydon a very rapidly increasing district?—It increases at the rate of between 4,000 and 5,000 persons a year.

2895. When you talk of 10,000 acres, is a considerable part of that area in agriculture, and not built upon?—A large portion of it.

2896. Has Croydon made a large outlay under its local government Act powers?—Yes; and under the Public Health Act also, a very considerable outlay. I think we have borrowed rather more than 200,000*l.*

2897. How have you borrowed it?—By mortgage of the rates, and almost entirely of various insurance companies.

2898. What is the rateable value of your district?—About 200,000*l.*, or a little over; about 210,000*l.* It keeps increasing, because house property increases so rapidly.

2899. Can you state the largest amount of rates levied in the pound in any one year for local government purposes?—

	In 1867.		Now.	
	s.	*d.*	*s.*	*d.*
General district rate, Lady Day -	1	8	1	6
„ „ Michaelmas -	2	0*	1	4
General purpose rate (for the year)	0	1½	0	1
Special district rate (for the year)	0	7	0	6
	4	4½	3	5

2900. Is the whole district under your local board in one union for Poor Law purposes?—It is.

2901. Could you also state the amount of poor rates in any one year?—In the year 1847 their amount was 3*s.* 6*d.*; for a few years afterwards, 3*s.*

2902. I think your chief outlay under your local government powers has been for sewage utilization and water supply?—Yes.

2903. With regard to sewage utilization, we do not wish to enter into the comparative merits of different methods. The Croydon plan is very well known, but what we wish to know is whether you think that the law gives you ample powers to carry out the system which you have adopted?—It does.

2904. Have you any suggestion to make as to the improvement of the law or of the authorities with regard to such operations?—Not with regard to the sewage irrigation or the utilization of sewage.

2905. Have you purchased land for the purposes of the utilization of sewage?—We have, I think, about 85 acres.

2906. Do you consider that your present system of sewage utilization succeeds?—Quite so.

2907. Does it cover its own expenses by the sale of the produce?—It does, and in one or two instances far more.

2908. Is the drainage of the town carried out upon one system for that ultimate purpose?—It is.

2909. And is every private house obliged to conform with your general regulation?—Yes, every householder is obliged to do so.

2910. Have you found any difficulty in enforcing such regulations upon private owners?—Not any.

2911. Has any litigation occurred between your board and the owners of property?—Nothing worth mentioning. Wherever we bring a sewer within 100 feet of a dwelling we make them connect the house with that sewer. Of course we abolish all privies; there are very few of them left now.

2912. Have you actually abolished privies?—Yes, as nearly as possible; we cannot of course where there is not a sewer within 100 feet of the house; we have no jurisdiction in such cases, but otherwise we have filled them up at a great rate; we filled up, I think, in the first few months, about 2,000 or 3,000 cesspools.

2913. Then you have adopted generally the principle of waterclosets?—Almost exclusively.

2914. Under penalties?—No, we have not had any occasion to inflict penalties; we give them notice to do it, and if they do not do it, we do it for them.

2915. Have you any staff of inspectors to carry out those regulations?—Yes.

2916. How many?—We have two nuisance inspectors, and we have two or three house inspectors who inspect the buildings and houses, and so on.

2917. Are those nuisance inspectors under your Poor Law authorities or under your local board?—Under our local board.

2918. Have not the board of guardians an inspector of nuisances?—I think not.

2919. Have you any medical officer?—We have not; we have two physicians on our board who act without pay.

2920. Your powers are complete for all local government purposes, are they not?—We find them so.

2921. Have you to co-operate with the board of guardians in any of those functions?—I think not.

2922. You have found some difficulties, have you not, as a suburban district with regard to your water supply, part of your district lying in the field of one of the London companies?—That is so, the Lambeth Water Company have the power of coming all over our parish with their mains.

2923. What arrangements have you come to?—The directions of the Act are, that you shall not lay down any water mains or take any measures for supplying our town with water as long as there is existing a water company willing and able to supply the inhabitants. When our board was founded in 1849 we found that the Lambeth Company had ample power to go all over our parish, but they had not laid their mains; so we gave them notice that if within a certain time they did not lay their mains down we

* The 2*s.* was an exceptionally high rate, and made to supply for deficiencies in the estimates.

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should take the matter in hand. To our great satisfaction they did not lay water mains down, and then we constructed waterworks of our own, which have inured to the great comfort and health of the parish, because we get good water out of two wells.

2924. Have you in fact excluded this Lambeth company from your field?—We gave them notice that we should extend our supply to a radius of two miles from the Town Hall, but that does not take in the whole parish. We did not go any further, because the Lambeth company had got their mains in part of our parish already before we gave them that notice. Then, having given them notice that we should confine ourselves to that radius of two miles from the Town Hall, we could not go any further because they have brought their mains since close up to where ours terminate; but it is very awkward, because the people of the Norwood end of the parish, who are supplied by the Lambeth Waterworks Company, do do not like the water so well as they like our own water.

2925. Do you consume much of your water supply for public purposes, such as flushing sewers and watering streets, and so on?—Yes, a great deal.

2926. How would you cover that expense?—That is paid for by the rates.

2927. What arrangement is made for the supply of private houses?—They are supplied by a rate. It is a very important part of our arrangements, because we have constructed our scale of charges so low as to induce everybody in fact to have the water; and I think that it is one of the most important things for the Commission to consider, because the real truth is that the supply of a town with a bountiful supply of water is the foundation stone of all sanitary improvement. For instance, we charge the cottagers 1*d.* a week or 4*s.* 4*d.* a year for the constant supply; then when we get up to cottages rated as high as 10*l.* it is only 5*s.* in the special district and 8*s.* 8*d.* out of the district. So that for 5*s.* a 10*l.* a year house gets the water on night and day.

2928. Do I understand that the private rate scarcely covers its own expenses, but throws to a certain extent a portion of the expense of the private supply upon the public rate?—No, it pays its way.

2929. When you say that it was fixed very low, do you mean to say that it is self supporting?—Yes, it is self supporting. Our object in making this scale, which I shall beg to hand in, was to get the charge as low as possible for the labouring classes; it rises faster above.

The witness delivered in the following Table:

CROYDON LOCAL BOARD OF HEALTH.

Water Rate.—Scale of Charges.

		In the Special District. Per Annum.			Out of the Special District. Per Annum.		
		£	s.	d.	£	s.	d.
Assessment not exceeding		5	10	0	0	4	4	0	6	6
„	„	8	10	0	0	5	0	0	8	8
„	„	10	0	0	0	6	0	0	12	0
„	„	12	0	0	0	7	0	0	14	0
„	„	15	0	0	0	8	0	0	17	0
„	„	20	0	0	0	9	0	1	1	0
„	„	25	0	0	0	10	0	1	5	0
„	„	30	0	0	0	11	0	1	9	0
„	„	35	0	0	0	12	0	1	13	0
„	„	40	0	0	0	13	0	1	17	0
„	„	45	0	0	0	14	0	2	1	0
„	„	50	0	0	0	15	0	2	5	0
„	„	55	0	0	0	16	0	2	9	6
„	„	60	0	0	0	17	0	2	13	0
„	„	70	0	0	0	19	0	3	1	0
„	„	80	0	0	1	1	0	3	9	0
„	„	90	0	0	1	3	0	3	17	0
„	„	100	0	0	1	5	0	4	5	0
„	„	120	0	0	1	9	0	5	1	0
„	„	140	0	0	1	13	0	5	17	0
„	„	160	0	0	1	17	0	6	13	0
„	„	180	0	0	2	1	0	7	9	0
„	„	200	0	0	2	5	0	8	5	0

The expense of constructing the waterworks was borne by the special district only, and hence the increased charge to consumers out of the special district.

2930. Do you use a part of your water supply for baths and wash-houses?—Yes, we do.

2931. Are they generally used by the labouring classes?—They are.

2932. Can you state to us the rate of mortality in Croydon?—In 1849 the rate of mortality was 26; at the present rate it is now 18·5. We have a quarterly report which is constructed by a gentleman who was an eminent physician there, Dr. Westall, classifying all the diseases and the rates of mortality, and, with the permission of the Committee, I will hand in our last quarterly return, which is as follows:

PARISH OF CROYDON.

QUARTERLY MORTALITY, from January 1st, 1869, to March 31st, 1869, inclusive.

Diseases.	North.	Norwood.	East.	South.	West and Central.	Union House.	1869.	M.	F.	1868.
1. Fever	0	0	0	0	0	0	0	0	0	10
2. Cholera	0	0	0	0	0	0	0	0	0	0
3. Diarrhœa	3	0	0	0	0	0	3	1	2	4
4. Dysentery	0	0	0	0	0	0	0	0	0	0
5. Scarlatina and Diphtheria	8	0	1	3	8	1	21	11	10	4
6. Small Pox	0	0	0	0	0	0	0	0	0	1
7. Measles	0	0	0	0	0	0	0	0	0	12
8. Whooping Cough	2	3	0	1	0	0	6	1	5	13
9. Erysipelas	0	1	1	1	1	0	4	2	2	1
10. Strumous Diseases	15	4	2	4	7	12	44	24	20	43
11. Disease of Heart	5	4	4	3	8	2	26	15	11	15
12. „ Respiratory Organs	11	16	1	3	18	1	50	25	25	43
13. „ Brain	7	7	1	0	10	4	29	19	10	22
14. „ Liver	1	1	0	0	0	0	2	2	0	7
15. „ Kidneys	0	1	0	0	3	0	4	2	2	5
16. „ Abdomen	0	2	1	0	3	1	7	2	5	10
17. Dropsies	0	0	0	0	1	0	1	0	1	5
18. Convulsions	4	0	1	0	4	2	11	10	1	11
19. Specific Diseases	2	1	2	1	3	1	10	3	7	11
20. Other Diseases	13	8	3	5	12	5	46	19	27	37
21. Accidents	1	1	1	0	2	1	6	4	2	4
	72	49	18	21	80	30	270	140	130	258
Per Cent. per Annum	1·693	1·557	1·235	1·676	1·793	—	1·853	0·960	0·892	2·033

19.—Cancer and other Malignant Diseases. 20.—Old Age, Natural Decay, Debility, Premature Births, &c.

Mortality per Cent. per Annum.—Winter Quarter, 1869.

* From the Registrar-General's Quarterly Return.	Average of 10 Years.	Year 1869.
* In the Town Districts of England -	2,724	2,655
* In the Country Districts of England -	2,302	2,256
* All England - - - -	2,536	2,484
In Parish of Croydon - - -	2,222	1,853

Population Table.

Year.	Population by Census.	Estimated Population.	Inhabited Houses.	Vacant Houses.	Births, 1st Quarter of the Year.		
					M.	F.	Total.
1861	30,229	—	—	—	—	—	—
1868	—	50,755	8,827	370	237	275	512
1869	—	58,278	9,303	820	288	258	546

Mortality at Comparative Ages.

Weather.

Year.	All Ages.	M.	F.	Under 2 Years.	2 to 10.	10 to 20.	20 to 40.	40 to 60.	60 to 80.	Above 80.	Mean Temperature.	Rain-fall.		
												In.	10.	100.
1868	258	133	125	76	39	9	31	29	58	16	41·4	6	6	1
1869	270	140	130	74	36	15	33	41	55	16	41·7	6	8	9

First Quarter, 1868 - - - -	2,033
Ditto 1869 - - - -	1,853
Average ditto, 10 years - - - -	2,222

Northern District - - - - - -	1,693
Norwood - - - - - - -	1,557
Eastern District - - - - - - -	1,235
Southern ditto - - - - - - -	1,676
Western and Central - - - - - -	1,793

Deaths in the Union House - - 30, Four of whom were not parishioners.

171 Notices for New Houses were given for the Quarter ending 31st March 1869.

April 1869.

E. Westall, M.D.,
For Local Board of Health.

2933. Can you distinctly connect that reduction of the mortality with your sanitary improvements?—We do most clearly.

2934. Have you any difficulty in carrying out the effectual removal of nuisances?—No, no greater difficulty than always occurs in most places in looking after people.

2935. Have you had any difficulty in charging the expense of such nuisance removal upon the persons liable?—No; we give them notice that if they do not remove the nuisance our people do it, and there is an account of our charge sent to them, and they are summoned before the magistrates if they do not pay.

2936. Have you any suggestions to make as to larger powers being required by local boards to prevent the erection of houses on unwholesome sites?—Yes, I have. We find that every now and then there are plans of buildings coming before us for approval in places which we see at once are not fit sites. For instance, we have a great many places where they get gravel, and when they have got the gravel out it is very likely the water comes in, and then the owners, not knowing what to do with this land, build cottages upon it, or houses of an inferior description, and we under our Acts have no power of saying "That is an improper site." All we can say is "Well, then, our "officer must see to the best possible mode of draining "them;" that is to say of the house sewage; and it is generally done by a cesspool, because the level is too low to reach our sewers. We think that we ought to have power to say "That is not a proper site for human dwellings."

2937. Does not the 34th section of the Local Government Act of 1858 enable every local board to make byelaws with respect to the level, width, and construction of new streets, and the structure of new buildings?—Yes.

2938. And does that enable you to do what you wish to do?—No, I am afraid not. The whole question of byelaws is very indefinite. The Court of Queen's Bench rule, that although you have got your byelaws confirmed, if they are contrary to the common law they are void, and then that opens a famous door for litigation.

2939. Have you got byelaws sanctioned by the Secretary of State?—We have.

2940. Do you think that any of those byelaws which you have might be made matters of general legislation?—That I have not considered. I am not able to say; I daresay they might.

2941. Have you had much communication during your experience with the Local Government Act Office?—Yes, a great deal.

2942. Have they interfered much with your proceedings?—No; they have generally aided and assisted us very materially.

2943. Have you any suggestion to make as to the relation between that office and your local board as regards any improvement?—No, I think not.

2944. Do you think that any intermediate board between the local government office and your local board would be useful?—I should think not; it would be decidedly a nuisance.

2945. Have you any reference to make upon any

W. Johnson, Esq.

June 1869.

subject to the Quarter Sessions?—We have never had any occasion that I remember.

2946. What appeal is there from your decisions on the part of any persons who might feel themselves aggrieved by anything you have done?—They have an appeal in some cases to the Secretary of State, which is very simple; they have nothing to do but to write to the Secretary of State, and then he sends us word to stop until he has sent down a commissioner, and then in other cases they may go to the Quarter Sessions.

2947. Is there any other suggestion that you would wish to make to the Commission?—I think with regard to the existing waterworks companies that if the power was given to the local boards to take, of course at a proper valuation, any portion of their district, it would be very useful. For instance, in our parish of Croydon there is the large district of Norwood, which the Lambeth Waterworks Company supply, and we cannot go there, although we have an abundance of water to supply them. If we had the power of purchasing that portion of the district, buying their pipes, and so on, and their rights over it, it would be very useful.

2948. Do you find in the operations of your board any difficulty from the number of Acts which you have to deal with,—the Act of 1848, the Act of 1858, the Nuisance Removal Acts, and the Sanitary Acts of 1866 and 1868, and the Sewage Utilization Acts? Do you think that the consolidation of all these Acts into one might simplify your operations, and render them more economical?—I think it would be more convenient for those who have the administration of those Acts, but otherwise we have no great difficulty. We fish it out as well as we can. There are certainly a great many Acts in Glenn's book,—Nuisance Removal Acts and all those things; if they were all in one Act of course it would make it more easy I daresay for those who are not lawyers, which several of us are not; and other boards also would find a great advantage in it, even more than we should.

2949. You seem to have a very active sewerage board, but do you not think that the multiplicity of Acts renders people ignorant of the law, and of their liabilities?—I should think most decidedly it would be better if they were all consolidated and simplified; there is no question about that.

2950. Do you think that not only the law but the authorities might be simplified?—I am not able to say anything about that.

2951. You have found no conflict between the sanitary authorities, the sewage authorities, and the local authorities of various kinds under those different Acts?—No we have not. There is one thing which I would also wish to suggest, and it is this: under one of the sections of our Act we have the power, in case we find that a house is not supplied with water, to enforce the supply, provided we can do it for a cost of not more than 2*d.* a week. Now cases occur, and have recently occurred in our parish, where there are houses which are rated so high that we cannot under our scale enforce it at 2*d.* a week, and yet we should like to enforce it, and we think that we ought to have the power of enforcing it when we can do it at the regular established scale. For instance, there are some large houses in our parish that have got into a state of dilapidation, and have been let out in tenements, and have got a number of dirty low people in them. We should like to enforce a supply of water there, but we cannot do it, because we cannot do it for 2*d.* a week.

2952. (*Earl of Ducie.*) You have given us an account of what appears to be a very great success; are the conditions exceptionally favourable at Croydom?—No, I think not; we are favoured in one respect, that we are on the chalk formation, and are able to get a copious supply of pure water, which perhaps might not happen in many places; we are just at the meeting of the London basin clay and the chalk formation, and by digging about 40 or 50 feet down we get into great fissures in the chalk which yield an abundant supply of pure water.

2953. You attribute much of your success, do you not, to your supply of water?—I look upon it as the foundation stone of everything in sanitary matters, because, if the water is your own, it enables you to flush the sewers copiously; ours are flushed every week, and not done by halves but done thoroughly; and then you have this advantage, that when you have got to deal with the utilization of your sewage it is so fresh that putrefaction has not commenced, and you therefore have a more inodorous mass to deal with, and when it is diffused over your meadows you do not perceive any smells, whereas if you have the contents of a parcel of stagnant cesspools, decomposition having taken place, a nuisance is created.

2954. You state that nearly the whole town is supplied with waterclosets; are there no ashpits in use?—Yes, there are.

2955. I mean by ashpits the use of ashes in privies?—No, that would be an abomination.

2956. Have you no daily scavenging of ashpits?—There are scavengers who go round constantly. We have about a dozen always at work going round, but they only clear out dry ashes, we do not allow them to have any privies like I heard described here as existing at Newcastle.

2957. (*Lieut.-Col. Ewart.*) You have mentioned that you have principally borrowed your money from insurance companies, at what interest did you generally borrow it?—Generally at 5 per cent. Some we got at $4\frac{1}{2}$.

2958. In what way do you repay it,—by a sinking fund?—No, by paying it off $\frac{1}{30}$th every year. It is done in a peculiar way which I could not without some little explanation make the commission understand. It is a kind of annuity, so that the total amount of principal and the interest are always the same.

2959. Do you mean that you repay the interest and the principal in 30 years by equal instalments?—Yes, about that. The sinking fund plan which was directed by the Act was impracticable, it could not be worked.

2960. Why was that?—Because you could not tell, as you would have to buy consols, what sum you were going to buy, because the price varies, and you do not know at the end of 5 years or 10 years what the price of consols would be, so that you might be buying too little now and too little then. Ours was a plan which in fact I concocted, and which met with the approbation of the Government, by which we paid always an equal sum; and there is a scale, which I could furnish the Commission with, so that as the interest decreased the payment of the principal increased, so that it came exactly to about the same thing—about 30 equal instalments of principal and interest; I cannot describe it better to you than as a kind of annuity.

2961. Do you think that it would be an advantage if greater facilities were granted for borrowing money for public works through the aid of a Government department?—Most decidedly. If Government would guarantee the borrowing of our money upon the mortgage of our rates we could get money at $3\frac{1}{2}$ per cent. instead of 5.

2962. Is the house water supply of which you have spoken constant or intermittent?—Constant.

2963. I think that at Croydon you have two separate areas for the utilization of sewerage, have you not?—We have.

2964. What distance are your sewage works at Norwood from the residences?—I think they come within half a mile of some of them.

2965. Has their proximity been found to be any nuisance to the houses?—No.

2966. Have you not had any complaints?—Yes, of course we had complaints, but they have all turned out to be baseless when they have been examined, although they were attributed to—. When you begin to irrigate with sewage if there is a smell of any sort

in the neighbourhood, people always impute it to the sewage, and then you have to send somebody to examine into it and to take the complainants with you and to convince them that it is not due to the sewage.

2967. But you believe that there has been no well founded complaint?—I do.

2968. From your experience and observation of the sewage utilization at Croydon do you see that there would be any great difficulty in applying it for large towns generally?—Not the least.

2969. Have you had any cases in your local board since it was first established of enlarging the area, or have you the same area that you had originally?—We have exactly the same. We had the whole parish to begin with.

2970. Do not you think that cases may arise in which it is desirable for administrative purposes to annex an adjacent district?—I should think so.

2971. Do you think that the present machinery for that purpose is sufficient?—I have never had any reason to doubt it. There are directions in the Act by which if you want an alteration in the area you can do it; but I have never had occasion to apply my mind to study how it worked.

2972. Have you arrangements for the inspection of houses when they have been completed and before occupation?—We have.

2973. They are inspected with reference to the numbers likely to occupy them, are they not?—Not so much as to the construction of them, and to whether the windows open at the top, for instance, and whether the ceilings are of the proper elevation, and whether they are properly drained and supplied with water.

2974. (*Sir Thomas Watson.*) As to the constant supply of water which you have spoken of, which you say is taken even to the humblest houses, is it carried to the house itself, or are several of those houses supplied from some common source,—a stand pipe for instance?—No; the water is carried into the house, and they may have taps all over the house if they like, because we encourage the use of water as much as possible.

2975. (*Mr. Bircham.*) Have you no special legislation at all?—No, nothing that bears upon this subject.

2976. In carrying out this constant supply you rely only upon the Local Government Act for the authority under which you act in the definition of pipes and cisterns, and so on, in houses for prevention of waste?—I should not say that we do not complain of waste, because there is great waste of water, and there always will be on the system of constant supply.

2977. Do you think that there could be any improvement in the general law upon that subject, giving you greater authority inside people's houses, which would prevent waste?—I do not know that it would. If there were some larger penalties imposed it might do good; but we have extreme difficulty to prevent waste of water; the waste is very great indeed.

2978. Your supply is derived from wells, is it not?—Yes, two wells, partly artesian and partly ordinary wells. For instance, one was made about 60 feet in depth, the other about 190 feet, and from these depths the water rises.

2979. You said that 200,000*l.* had been spent by the local board in Croydon. Can you tell how much of that has been spent upon water supply?—About 70,000*l.*

2980. In suggesting other legislation for enabling the local board to possess itself of a water company's position, what you want is power to buy a part of a company's district as distinguished from the whole?—Just so. I think that there ought to be a general power to a local board either to purchase the whole or a portion, because we have a strong opinion that the water supply ought not to be in the hands of private companies.

2981. (*Mr. Shaw.*) Some years ago I went over your experiments of sewage irrigation on the Carshalton side, and I think there you had principally green crops?—Yes.

2982. Do you still find them answer best?—Yes.

2983. It is a very light soil on that side, is it not?—Yes, it is alluvium.

2984. Is it not a stiff soil on the Norwood side?—Very stiff indeed there.

2985. The soil on the Carshalton side would evidently take a great deal of moisture without being the worse for it, but do you find any difficulty in applying that experiment upon the Norwood side, where the soil is stiff?—Not any.

2986. It takes that amount of liquid without difficulty, does it?—Yes; and we were very much disappointed, of course pleasantly so, because we had an impression that the London basin clay would not admit of sewage irrigation; that it was too impervious owing to its adhesive nature, and that the sewage could not penetrate to the roots of the grasses; but we found, which was a little curious, that a large portion of the fibrous roots of the grasses came out of the soil after the sewage, as it were, and formed a matting over the surface, so that the quantity of grass which is produced upon that stiff clay is even greater per acre than upon the Beddington soil, and the water runs off, if possible, brighter.

2987. Is there much offensiveness from the greater quantity of sewage matter keeping near the surface in the stiff soil?—No. In the Norwood district that is supplied by the Lambeth company the quantity of sewage is measured out by the quantity of water which they supply the district with. As their supply is limited, being intermittent, and only about once a day, the quantity of their sewage is less, and consequently is stronger than ours; but still there is no difficulty in working the thing.

2988. You spoke of having filled up cesspools and done other works, and you mentioned that if persons resisted you would do the work for them; do you find that a preferable method to sueing them before the magistrates, and imposing upon them a continuing penalty for not doing the work themselves?—In practice we very rarely have to enter upon the premises. Of course we do not stand any waste of time, but the people, when we give them notice, will very readily do it themselves, or ask us to do it, as we can do it cheaper than they can.

2989. When you spoke of parties applying to the Secretary of State, and the Secretary of State telling you to stop until he had made some inquiries, has he any statutory power to do that?—Yes; I think so.

2990. Do you happen to remember under what Act that authority is given?—I cannot; but I know that he has the power.

2991. As to those houses which you spoke of which have a deficient water supply, houses of originally large size and afterwards let out in tenements, is there any water supply at all in them or is it merely insufficient?—In two or three cases which have been brought to our notice the water supply is quite absent. They are obliged to go and borrow water; they get it from public-houses, or from their other neighbours.

2992. Do you know the clause in one of the Metropolitan Acts that where a house has been dealt with in that way, and thereby a larger number of persons brought into it than it was intended for, and so the number of persons become too great for the capacity of the cistern as originally made, there is power to the vestry, either to require the occupier of the house to make a larger cistern, or else to submit to be treated as a case of overcrowding?—I am not aware of any such clause.

2993. Would you think that a good clause for meeting such an evil?—We should not have anything to do with cisterns, because we generally have set our faces against cisterns. Our water supply is always constant.

2994. You spoke of the inspection of houses with reference to ceilings and windows and so on; do you inspect twice, once when the foundations are laid and again when the house is completed before it is inhabited?—Yes; and they cannot occupy the house till they have our certificate.

W. Johnson, Esq.

9 June 1869.

2995. Do you remember what clause that is under?—No, I cannot remember; if it is not in a clause it is in one of our byelaws.

2996. Have you adopted the lodging house clause in the Act of 1866 with the consent of the Secretary of State?—No, we have not.

2997. (*Mr. Powell.*) Do you find in the houses of the humblest class any inconvenience arising from dampness or the like, owing to the bursting or leakage of water pipes, yours being a water supply to each house however humble?—We have never met with that inconvenience.

2998. You have a good many dwellings of a very humble class, have you not?—Yes.

2999. (*Mr. Cave.*) Why do you say that the 34th section of the Local Government Act, with regard to the construction of houses, does not apply to you?—I do not remember saying so exactly.

3000. (*Mr. Powell.*) I presume what you want is power to keep up the ground floor?—Yes.

3001. (*Mr. Cave.*) What you state is that you cannot prevent a house being built in what you consider a bad place?—Upon an improper site.

3002. So that the requirements of the Act cannot be carried out on that site?—Precisely so.

3003. And that the site itself prevents their being efficiently carried out?—Just so; we find those houses in pits and low-lying places where we know that fever will most likely visit the tenant when they are built, and yet we cannot stop them.

3004. And you do not consider that those provisions in the 34th section, with respect to the free circulation of air and to drainage, prevent your stopping the building of a house in a place where neither of those things are possible?—Just so; but I think you will find that that relates to the level of the streets, and where they use the word drainage the Court of Queen's Bench ruled that that referred to the sewage of the house and not to the land upon which the house is built.

3005. How do you take the sewage to the meadow which you irrigate?—It goes partly through a covered sewer where it is desirable, and partly through an open channel about a mile and a half.

3006. How near are the nearest houses to the open channel?—Some of them are very close.

3007. Is there no inconvenience from that open channel?—No, none.

3008. Do you take any method of deodorising it except by diluting it with water before it goes into the open channel?—Yes, in very hot weather in summer now and then, if there is any effluvium, we do. After the sewage has got from the town through the main sewer, about three quarters of a mile, it then approaches the meadows. Then in order to avoid the distasteful appearance of paper, and what not, there are two settling tanks which have a filter erected in the centre, which strains out the paper and large lumps of things before it flows on to the meadow. Then in warm weather those tanks that are not emptied above once a week or 10 days are apt to get a little offensive, and in that case we use some carbolic acid and other things to stay it. But we are now going to do away with those settling tanks. We have got a plan by which instead of being strained in the tank it will be strained in a kind of revolving sieve, where it will all pass out, and there will be no time for any decomposition to take place; it is a plan of our engineer, Mr. Baldwin Latham.

3009. Is it your opinion that such a plan as you adopt would be wholesome in a locality much more thickly peopled than the one which you have around Croydon?—Yes; I think if the sewers are properly constructed, and there is an abundant supply of water, the sewage is almost inodorous. Having had pretty considerable experience in this matter I am quite prepared to say that not one man in 10,000 knows what town sewage is.

3010. All that is done under the general sanitary Acts and under byelaws of your own?—Yes.

3011. You have no local Acts of your own I believe?—We have no local Acts applying to this subject.

3012. But you have byelaws I think you stated?—Yes, which have been confirmed by the Secretary of State in the usual way.

3013. Are those byelaws founded upon the general Acts or are they merely byelaws with regard to the special circumstances in your own case?—I should say that they are founded upon both, some upon the Public Health Acts, but chiefly upon what we require for regulation. Formerly there were certain things done which the Act provided for; those sections were repealed, and in their place we were authorized to make byelaws. I do not think that that is a very satisfactory way; it would be much better I fancy if they were embodied in some statute.

3014. You think then that a general Act might be passed which would apply to the circumstances of all places?—I should think it might be so.

3015. Have you given much attention to that subject?—I cannot say that I have as much as to other portions of our inquiry.

3016. Of course, having an active committee such as you have, you have not been liable to complaints or to inspectors being sent down from the central authority, and therefore you cannot speak upon this point?—I think we have not had many complaints to induce the Secretary of State to send down anybody to see how we are going on, and I believe he has generally approved of our conduct.

3017. If anything you have rather been in advance of the age instead of neglecting your duties?—Unfortunately we were in advance at first. We have had to fish out, as well as we can, all sorts of things. We have never had any precedent. We had to go through a most tremendous lawsuit, because some millers had the notion that when we made the well we robbed them of the water, although it had no connexion with their river. There is no doubt it intercepted the water before it reached the river to some small extent, just as a water butt at the corner of a roof it intercepted their water. However, we had to fight it out at an expense of 5,000*l.* or 10,000*l.*

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 14th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.P., F.R.S.
Lieut.-Col. EWART, C.B., R.E.
SAMUEL WHITBREAD, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

(18.) HENRY DAVY, Esq., examined.

H. Davy, Esq.

14 June 1869.

3018. (*Chairman.*) You are clerk to the Local Board of Health of Ottery St. Mary, in Devonshire?—Yes.

3019. Will you state what is the nature of that board, and when was it established?—The board was established on the 3rd of July 1850, by an Order in Council.

3020. Under what Act was that?—The Public Health Act, 1848.

3021. When the Local Government Act of 1858 was passed, the powers under that Act became applied to the local board of Ottery St. Mary?—Yes.

3022. I presume that you have no Local Acts?—We have no Local Acts.

3023. What is the area of the district?—The parish of Ottery St. Mary containing 9,944 acres.

3024. How much of that is under the board?—I can scarcely give you the area, if the area of town sewage and water supply is meant; the population of the whole parish is 4,340.

3025. Is it all one Poor Law Union?—The parish of Ottery St. Mary is comprised in the Honiton Poor Law Union.

3026. Is the whole district one parish?—The parish of Ottery and the local district are co-extensive.

3027. Is there a large part of the district rural compared with the town?—Yes, very large; the population of the parish being 4,340, I apprehend that the town itself does not comprise above 2,500.

3028. How was your board constituted? Was it by election?—The members of the board were elected by the ratepayers.

3029. How often does that election take place?—It is an annual election.

3030. Do they all go out every year?—No, three go out each year.

3031. Has any special district been formed?—For the purposes of sewerage and water supply the board voted that a rate should be levied upon the whole parish; that the whole parish should be comprised in the special district for those purposes. It was attempted a little while ago to form a special district to borrow money for paving purposes, but we found that we could not accomplish it.

3032. Then you have no special district rate?—There was a special district rate made for the sewerage and water supply, and a rate was made and money borrowed upon it, but of course after the Local Government Act came into operation, the special district rate ceased to be levied, and the instalments of principle and interest were paid out of the general district rate.

3033. Is there any object for which there is a rate special to a part of the district?—Yes; about three years ago the town was very anxious to have some works of pavement done, which was objected to by the board, except on the condition of a special rate being made upon the town district; that was consented to, and an application was made to the Secretary of State, and a loan was sanctioned to be paid by a rate upon that special district, but the board did not adopt it and would not act upon it, because they found they could not borrow the money without having the sanction to borrow upon the whole property within the parish as security.

3034. Then it was not done?—No; it was not done.

3035. And the work remains undone?—The loan was not made and the work was not begun with the view of carrying it out immediately, but the works have been commenced by a rate levied on the town district, and they are not yet completed.

3036. Under the Act, some rates fall more heavily on the town part than on the rural, do they not; for instance, the highway rate?—The houses throughout the whole district are assessed at four times their value; that is to say, the value of the land at one fourth of the value of the buildings.

3037. What works have been carried out under your powers?—A sewerage throughout the town district and a water supply; no other public works. Of course there had been a few improvements made, arches turned, and so on, until the paving which I alluded to just now within those three years.

3038. Are the sewage works satisfactory?—Upon the whole I believe they are; it is the pipe system.

3039. What is the nature of the sewage works; is there one drainage system of the whole place?—Yes, with two outfalls.

3040. What is done at the outfalls?—Nothing; the main one flows into the tail of a mill-stream (after it has passed through the mill). It flows into the tail-water. And the other is collected in a tank made on private property.

3041. Are there no irrigating works carried on?—None; at least not in connexion with the public works. There is irrigation in various parts of the parish.

3042. Into those drains which pass to those two outfalls, do all the contents of privies go?—Yes.

3043. Is not there some unhealthy deposit at the mouth of those outfalls?—I am not aware that there is. In the one case it falls into a considerable stream of water, and in the other it is in a covered tank, which is emptied occasionally.

3044. Is the running stream into which the sewage is discharged a river which cattle and human beings may drink from?—It flows into the main river, perhaps, about a couple of furlongs from its outfall. Cattle no doubt drink from the river below the outfall, but human beings certainly not.

5045. Are your waterworks satisfactory?—I do not know whether the pipes for the water supply were quite big enough at first. There has been some corrosion, and we have been obliged to renew the pipeage occasionally.

3046. Is it good water?—Very good water.

3047. Then your only doubt is about the supply being sufficient?—Precisely so. Occasionally a pipe will be defective, because it is choked with corrosive matters.

3048. Where does the water come from; is it from wells, or from what source?—An iron tank was sunk in the midst of a piece of ground which was full of springs, and the water has been drained into it.

3049. What loans have you taken up?—2,800*l.* was borrowed for the sewage and the water supply.

3050. Where did you get the money?—Under the sanction of the Secretary of State it was borrowed from the West of England Insurance Company.

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3051. Will you state the terms upon which it was borrowed?—It is payable by instalments in 30 years at 4½ per cent.

3052. And a sinking fund added, I suppose?—No; there is a schedule made stating what the principal and what the interest is, to be paid off each year.

3053. Do you mean in the way of equal instalments every year?—No; it was not so. For instance, 20*l.* of the principal was to be paid off at the end of the first year, and now we are coming to pay off 90*l.*

3054. Was this loan sanctioned by the Secretary of State?—Yes. There was also a sum borrowed for private works, where the owners did not choose to pay, or were not in a position to pay, the charges for the works on their own premises.

3055. In such cases have you borrowed money?—In such cases it was charged upon the property, and a sum of 656*l.* was borrowed from the West of England Insurance Office to pay off the tradesmen's bills.

3056. What security did you take from the owners in that case?—Their property was all scheduled, and a private improvement rate was made upon their property, and that was mortgaged.

3057. Have you had punctual repayment from the owners in every case?—As a rule we have. In consequence of a very destructive fire that occurred in our town in 1866 there were a very great many void premises, and the rates have been paid since. We had no means of enforcing it while the houses remained in ruins.

3058. Has the whole of the sanction that you received from the Secretary of State been acted upon?—No; because we have his sanction to borrow 1,400*l.* for the works of paving, which has not been borrowed, as I said before, and that was because we could not mortgage the rate made upon the special district.

3059. Have you found that the opposite interests of the rural and the town population impede your improvement?—That is an instance of it. It was the rural population who would not pledge the credit of the whole district for the borrowing of this money.

3060. Have you often found such oppositions of interest?—Perhaps it may have cooled the action of the board a little, but the rural members of the board are very respectable men.

3061. Can you state to the Commission generally the present state of the district as compared with what it was before those powers were given you?—I can say from my own memory that for a year or two before the board came into operation fever was very frequent in the summer, quite an epidemic; but for the last 15 years, at any rate, there has not been a case of epidemic fever there. There are occasionally single cases, but they do not extend.

3062. Were there any particular localities to which fever attached?—There was a place, a large open pit, before the board was established, and it was one of the great objects of the board to get rid of that.

3063. Were there places badly drained where fever was constantly occurring?—That was so.

3064. That has ceased to be the case now?—I think it has. I was speaking to one of our medical men on Saturday, and he told me that the last case, where he had had more than one case in a house, was very near the same place, a brook which has now been arched over.

3065. What sort of water did they drink before they had the new water supply?—Pumps were very general.

3066. Were there any polluted ponds or pools that they took water from to drink?—I cannot say that there were.

3067. Can you state the rate of mortality at Ottery St. Mary?—No. Dr. Buchanan was at Ottery some time ago, but he could not ascertain it with any accuracy, and he has mentioned that in his report.

3068. Have you no means of knowing whether the rate of mortality has been reduced by your public works?—I think that Dr. Buchanan said that it was not altered very much.

3069. Can you state the total amount of rates which have been levied in any one year under your Local Government Act?—I think that 2*s.* 10*d.* upon the house property within the entire district is the largest that has been levied. But in the same year 1*s.* in the pound on houses in the town additional for paving, making 3*s.* 10*d.*

3070. But upon the rural property how much?—One-fourth of 2*s.* 10*d.*

3071. But that proportion of one-fourth would apply to all rates, would it not?—Yes, the general district rate.

3072. Can you state to the Commission what the maximum poor rates amount to in your parish of recent years that you recollect?—I think 3*s.* 6*d.* would cover it.

3073. Are there any other local rates besides those included in those two items?—No local rates.

3074. Do you think generally that your local government works satisfactorily, or have you any suggestion to make to the Commission as to its greater efficiency?—I do not know that I could make any suggestion. I think that the management of the parish, perhaps, is rather more regular since the establishment of the board. We have got rid of many vestry squabbles, and there has been only one contest since I have been clerk at the election of members.

3075. Of how many does your board consist?—Nine.

3076. Are the guardians generally on it practically?—No; it is not a thing at all looked to.

3077. Practically, are the men who happen to be guardians generally on that board?—I should say not.

3078. Have you had much communication with the Secretary of State in the working of your board?—Not since I have been clerk.

3079. How long have you been clerk?—I was appointed in 1862.

3080. Have you never had any inspection from the Local Government Office in London?—No. There may have been before I was clerk.

3081. No communication at all?—No, except asking for returns now and then as to the condition of the parish.

3082. Who is your inspector of nuisances?—Mr. Norrington; he is appointed by the board; he is surveyor and inspector of nuisances.

3083. Is he in any other office?—Not under the board; he is an auctioneer and surveyor; he is surveyor to the highway board also.

3084. Do you consider that your nuisances are effectually removed?—Occasionally there is a nuisance of which we have to give notice, but I do not know that there is anything but what we have power to get removed when we discover it.

3085. Do you think that there are any nuisances which are not reported?—I do not think there are.

3086. Practically, have there been many reports of nuisances?—No, generally if a notice is given to people, they remedy it at once.

3087. Is it your belief that the fact of nuisances existing is really brought to your notice, and that the nuisances are removed?—It is so. We have several slaughter-houses in a district of the town, and there is occasionally a smell there. There is one very near my own house, but I wrote a note to the man complaining of it, and it was removed directly.

3088. Have you had occasion to carry out your power as to offensive trades in any case?—We have no offensive trades except that.

3089. As to the smoke nuisance, have you any of that?—We do not think anything of it. We have nothing of that kind to complain of.

3090. In fact your drainage and water supply have been the chief things that you have done?—Yes.

3091. Are there any other public works which you think ought to be executed which are not done from

want of power or from opposition?—We shall have great difficulty in completing the pavement, inasmuch as, not having the power of borrowing practically, the rates are felt very much, and some people say in the town,—"This paving does not come near me. I am "not a bit more interested in it than the people in "the country, and they ought to pay for it."

3092. Do you think that you have got as large facilities of borrowing as you want?—I think that we should have carried out the pavement very well if we could have borrowed upon a limited area. I understand the law at present to be that the rates of the whole district must be pledged for money borrowed, and yet there is a power of raising money and to pay it off within a limited district.

3093. Are there any complaints made of the expense to which your works put the place?—I believe that many of the ratepayers complain of the expense.

3094. Do you think that by any amendment things could be done more economically?—Ours are all done economically.

3095. I do not mean the works, but the machinery of your government, whether you could have a more economical mode of local government, either by reducing your staff or in any way economizing your expenses?—I do not think that you could in our case. I do not know of any means of doing so.

3096. (*Earl of Ducie.*) You say that your system of drainage comprises two outfalls, one into the mill tail of a mill and the other into a tank, does that outfall into the mill tail take place near the tideway, or how far above the tideway?—We have no tide.

3097. How far above the highest point to which the tide flows?—Six or seven miles.

3098. Your other outfall is into a tank upon private property, what happens to the sewage in that tank?—It was intended, I believe, originally to have tried to have utilized it, by disinfecting it, but practically it is cleared out occasionally.

3099. At whose expense?—At the expense of the tenant of the land where it is; the board have nothing to do with it.

3100. Is he willing to be at the expense of it for the advantage of using the manure?—He uses it himself for his own purposes.

3101. Then he is willing to be at the expense of removing it for his own benefit?—Yes.

3102. You have no difficulty in getting rid of it?—I never heard of the slightest difficulty.

3103. (*Lieut.-Col. Ewart.*) Have the local board any inspectors for health purposes?—There is the surveyor and inspector of nuisances, the same person that I mentioned before, nothing else.

3104. Have you no medical officer?—No.

3105. (*Dr. Acland.*) Have you any power of regulating new cottages?—We have no power of regulating new cottages.

3106. Have you any power over existing cottages?—Only the power given by the Public Health Act as far as cleanliness goes.

3107. Are there any very bad cottages in your neighbourhood?—There is a cluster of very dirty cottages about a quarter of a mile out of the town.

3108. And is there no power in your board of altering or remedying the evils in them?—If they are reported as prejudicial to health they may be cleansed.

3109. I think that the guardians have the power of obtaining sanitary reports in your district, have they not?—I believe it is so.

3110. But they do not exercise that power in your neighbourhood?—It does not come under my cognizance as clerk to the local board.

3111. Does the local board exercise such a power?—If their officer reports anything dirty, or whitewashing required, two medical men I believe must report upon it.

3112. But the local board does not take the initiative?—No.

3113. Do you know whether in your district there are any societies for giving plans for agricultural cottages?—I have not heard of any.

3114. Then are there no recognized or established plans in the neighbourhood that you know of?—Not that I know of.

3115. (*Mr. Lambert.*) Have you any byelaws prescribing the duties of the officers of the board?—Yes.

3116. And the duties of the clerk?—Yes.

3117. And of the surveyor also?—Yes.

3118. Has the local board incurred any legal expenses during the last three years?—No, except there were some cases taken before the magistrates for enforcing the payment of rates lately, not otherwise.

3119. Have any heavy legal expenses been incurred since the board was established?—None whatever.

3120. Who audits the accounts of the local board?—The poor law auditor, Mr. Tucker, of Ashburton.

3121. How far does he reside from the district?—I think it is about 12 miles from the Newton Station, and then it must be about 30 miles by railroad, about 40 miles altogether.

3122. What fee do you pay him for auditing the accounts?—We used to pay him 2*l.* 2*s.*, but he is now paid 4*l.* 4*s.*, he comes specially for the purpose.

3123. Does he not arrange to audit the accounts of the local board at the same time as he audits the accounts of the union?—It used to be done so, but we have not been able to get them ready in time for several years.

3124. Do not you think it is desirable that some arrangement should be made requiring the auditor to hold his audit for the poor law union and for the local board about the same period?—I think that would be desirable, but we are obliged to give 21 days notice before the audit, and a much shorter period is required for the poor law audit.

3125. Might it not be so arranged by the auditor without difficulty, to hold his audit at the same time or nearly at the same time?—Our accounts to Lady-day are not audited yet. The audit is fixed for the 30th of this month, we could not get it ready before.

3126. But you could have postponed his other audit, could you not?—I do not know.

3127. Did he charge you anything for travelling expenses?—The 4*l.* 4*s.* includes his travelling expenses.

3128. Has he had occasion to make any disallowances?—None whatever.

3129. He has not objected to any item in your account?—No.

3130. (*Mr. Bircham.*) Have you any experience of water being polluted by sewage filtering into the wells?—I do not know of any such case, but I recollect that when the preliminary examination took place before the establishment of the board, evidence was given to the effect that there was then.

3131. Has any correction been applied by the local board in any cases?—Simply that there are no open privies. Waterclosets are attached to every house or group of houses.

3132. Have houses been built either in improper situations or in an improper condition for human habitation in your district?—There was a case of which I heard and I believe it to be quite correct. A man, I think it must have been last year, erected a hut upon some waste land or land that had been waste, he bought it and went into it without any floor, living simply upon the bare earth, and the result was that he suffered from fever for a long while.

3133. That was a simple cause of squatting, was it not?—Yes, except that it was his own property.

3134. Have you any experience of cottages built for letting under ordinary circumstances being let to tenants in an improper condition for habitation?—I heard of a case lately of overcrowding where I presume the man was dividing the house into small compartments.

3135. Was there any attempt made to correct it?—The matter was brought before the board, but we thought we could do nothing, inasmuch as they were

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all members of the same family who were living there.

3136. Do you think that further legislation on that subject is desirable?—I do not know how you could interfere with the members of a family.

3137. (*Mr. Shaw.*) Your board is not in communication with the guardians officially, is it?—No.

3138. Then you do not officially get the benefit of the medical officers of the union?—Not officially, but there is a medical officer of the union residing in the town.

3139. You are not officially in communication with any medical authority so as to have the habitual advice of any medical authority?—No; there is a medical man a member of the board.

3140. But it is not necessary that he should be?—No, it is not necessary.

3141. Does he in any way make inspections or bring in reports, or does he merely judge upon what your inspector has told him?—He merely judges upon what he hears in the board room or upon what the inspector tells him.

3142. So that you have no medical authority to get information and to bring before you the unhealthy state of things that may be existing?—None.

3143. As regards this overcrowding of cottages the only remedy in the case you spoke of I imagine would be some provision requiring greater ventilation to be adopted, seeing that they were members of one family?—I do not know how that could be applied. Of course if there are too many people in a small space there must be a great want of ventilation, but I do not know how it could be applied.

3144. (*Mr. Powell.*) With reference to the clause of the Act of 1866 under which you give notices to persons where there are nuisances, instead of at once issuing a summons I think you state that the notice was generally sufficient; do not you think it very convenient to have that process, and thereby to avoid one of the causes of irritation which arises from the commencement of legal proceedings by summons?—What I meant to say was that generally speaking the intimation from the surveyor had the desired effect.

3145. Do not you think it very desirable to retain that power of notice instead of being compelled to commence your proceedings by a formal summons? I should think so. We have given that notice in one or two cases.

3146. Do you consider that the notice to which you have referred is a sufficient compliance with the 21st section of the Sanitary Act of 1866, which says that before issuing a summons you must give notice?—That is a legal notice under the Act of Parliament. I do not mean to say that a friendly notice from the surveyor was sufficient to justify the issuing of a summons; I meant a friendly notice prior to the notice required by the Act of Parliament.

3147. In the answer that you have given you did, intentionally, or unintentionally, make reference to the powers given under the Public Health Act and the Local Government Act; you are doubtless aware that the local board is also a nuisance authority and has power under the Nuisance Removal Acts?—Yes.

3148. I presume that you enforce those Acts of Parliament and remove nuisances in pursuance of the provisions therein contained?—Yes, of course.

3149. And do you find those powers under the Nuisances Removal Acts in any degree defective?—We have not found them so.

3150. (*Earl of Romney.*) When you use the word "notice" have you not used it in two senses. With regard to the notice which you say has generally been sufficient, have you not meant by that such a notice as where the inspector says to a person, "You "have got a nuisance here, and you must get rid of "it"?—Yes.

3151. Then supposing the person did not get rid of it, would you not consider it necessary to give a legal notice under the Act of Parliament as the basis of legal proceedings?—Yes.

3152. (*Chairman.*) Could you state to us the rateable value of your district?—The rateable value of the houses of the district is 3,636*l.*, and of the land 12,525*l.* That probably may be varied a little by the union assessment action which is now going on.

The witness withdrew.

R. Johnson, Esq.

(19.) Robert Johnson, Esq., examined.

3153. (*Chairman.*) You are clerk, are you not, to the local board of Llanelly?—I am.

3154. Is that on the sea coast?—Yes, of Carmarthenshire.

3155. Under what Act do you conduct your local government?—At the present time under the Local Government Act. The Public Health Act was applied to the district in 1850.

3156. The Local Government Act of 1858 became applied to you, did it not, when the Act passed?—Yes.

3157. In fact you have adopted generally the public Acts?—Yes, quite so.

3158. Have you no private Act?—There is a Lighting Act, and there is a Burgesses Act. Prior to the adoption of the Act of 1848 by the local board the town was under the government of the burgesses and a portreeve under a private Act of Parliament,—the Burgesses Act.

3159. What led to that change in your government?—An application was made, emanating I believe in the first instance in 1850 from the Chamber of Commerce of Llanelly, to have the Act applied to the district. That was opposed for a short time by the burgesses, but they afterwards consented to give way, and the Act was applied, and the local board now exercise the same power as the burgesses did under their Act. They have become trustees of the estates which originally were under the control of the burgesses.

3160. What was the cause of dissatisfaction with the former local government?—I am not aware that there was any dissatisfaction.

3161. What led to the movement for a new form of government?—That I cannot tell. I went to Llanelly only a few years since.

3162. How is your present board constituted?—There are 12 in number, constituted by election.

3163. How many go out every year?—One third go out every year.

3164. Is the parish of Llanelly a poor law union?—No; there are four or five small parishes in the union, besides the parish of Llanelly.

3165. Do the union and the local government district coincide?—No; the district local board is only a small portion of the union. The parish of Llanelly comprises about 20,000 acres.

3166. What is the acreage of the district taken out of the parish of Llanelly?—1,213 acres 2 roods 37 perches.

3167. Can you give us the population of the whole parish, and also of the district?—The population of the district might now be taken at about 13,000. In 1851 it was 8,000, in 1861, 11,000, and I suppose now it would be about 13,000, and the population of the parish would be about 17,000.

3168. Then in fact the district is nearly the whole parish in point of population?—In point of population it is, though not in area.

3169. Can you distinguish in the district what I may call the urban from the rural population; that is to say, the part which is actually covered with buildings, and the part which is more agricultural?—The town is a very scattered town. A large portion of the town lies about midway between the hills and the sea. Then there comes a large flat, and

beyond that is the port, which is considerably increasing.

3170. There are a good many houses about the port, but over the rest of the district are the houses scattered pretty equally?—There is a large unbuilt piece of ground lying between the port and the town proper.

3171. What is the rateable value of the whole of your district?—The rateable value is 35,136*l.* according to the last rate.

3172. Have you carried out many public works under the powers of your board?—There are considerable works in course of being carried out.

3173. Will you state what they are?—Principally sewerage works and water works. The first works that were commenced were for the purposes of water supply in 1853.

3174. That was three years after your board was formed?—Yes.

3175. What amount of expenditure have you made on them?—At that time there was a sum of 10,000*l.* borrowed.

3176. How was that borrowed?—It was borrowed from the Royal Exchange Insurance Company, repayable by annual instalments in 30 years.

3177. At what rate of interest?—Four per cent.

3178. Was there a sinking fund?—No, there was no sinking fund.

3179. Has that 10,000*l.* been expended upon your waterworks alone?—Yes; and in 1859 there was a further sum of 4,000*l.* borrowed for the purposes of the water supply; that was also borrowed from the same company, repayable over the same period, but at five per cent. interest.

3180. Was the higher interest in consequence of the security not being so good?—I do not know what was the cause of the rate of interest being increased, it was before I was appointed clerk to the board.

3181. Were both those loans sanctioned by the Secretary of State?—Yes, all the loans have been sanctioned by the Secretary of State.

3182. Does the 14,000*l.* represent the complete expenditure on the waterworks?—No; in 1865 the board obtained a private Act of Parliament to construct additional waterworks; the 14,000*l.* built a small reservoir which was fed from a river called the Trebeddod River; that, for some years past, has been wholly insufficient for the supply of the public with water, and scarcely sufficient for domestic purposes. They then obtained an Act of Parliament in 1865, and obtained powers for borrowing a further sum of 40,000*l.* for the purpose of constructing an additional reservoir further up another valley, and they have borrowed under that Act of Parliament 27,000*l.*; 35,000*l.* was to be borrowed on the security of the water rates, and 5,000*l.* on the estates belonging to the board.

3183. Have you taken up more than the 27,000*l.* yet?—No, we have only taken up 27,000*l.*

3184. Does that 14,000*l.* and 27,000*l.* represent the total amount of money raised for your waterworks?—Quite so.

3185. Was that last loan of 27,000*l.* raised in the same way as the former loan?—No, it was borrowed from the Public Works Loan Commissioners at five per cent., repayable in 20 years by annual instalments.

3186. Did you go to the Public Loan Commissioners because you could not find better terms in the market, or did you go at once to them?—I am not prepared to say whether application was made to other companies before it was made to the Public Works Loan Commissioners.

3187. What was the security offered for your first two loans?—The first loan was secured by a special district rate, and the second by the general district rates.

3188. Is the supply of water given now good and sufficient?—This year it will be amply sufficient, I believe.

3189. Before, was it both deficient and bad?—It was very deficient, and consequently when the water became low in the reservoir it was very bad. The new waterworks have not been completed at present. The line of pipes is completed, but the embankment of the reservoir has not been constructed, and the supply is not quite perfect at present, in consequence of the communication between the two points, the old works and the new works, being through the old line of pipes, a small nine-inch pipe.

3190. Do you expect to be obliged to raise the rest of the loan for which you have powers?—I do not know that it will be necessary to raise the whole of it. We have not commenced the embankment yet, and some of the members of the board are about having an interview with the engineer, Mr. Beardmore, this week, relative to the appropriation of a part of the loan which has been obtained.

3191. Has there been any opposition made to this outlay on the ground of its expensiveness?—None whatever.

3192. Will you tell us in like manner what you have expended on your sewage works?—In 1861 there was a sum of 1,500*l.* borrowed, and in 1863 5,000*l.* These loans were obtained from the Royal Exchange Company, secured by the general district rates, repayable over 30 years, and with interest at five per cent. We are now negotiating a further loan of 2,000*l.* for sewerage purposes, but that is not completed at present.

3193. Why was it necessary for you to get a private Act to get your additional loan for waterworks; would not a Provisional Order of the Secretary of State have enabled you to do that under the Act of 1858?—No, it would not have been sufficient, because the land which is taken is beyond the district of the board, in the first instance; and there was another objection, because under the Provisional Order we should have been obliged to have adopted the whole of the provisions of the Local Government Act, and to have compensated the owners of the mills and the lands through which the water passed, before we could have done anything at all.

3194. Was your private Act opposed at all?—I believe it was very slightly opposed. There are two clauses which were required to be inserted on behalf of the mill owners or land owners; there was practically no opposition to the bill; the oppositions were all withdrawn before it came on for hearing.

3195. To revert to the sewage loans; has this third loan of 2,000*l.* which you are about now to take up been sanctioned by the Secretary of State?—Yes; we have power to borrow up to the extent of 12,000*l.*

3196. Are those three loans for sewage works and the three loans for water works all the loans that you have taken up?—No; there has been money borrowed for the purposes of building a market.

3197. For any other purpose besides that?—No; for no other purpose.

3198. Can you tell us the aggregate sum that you have borrowed?—The aggregate sum that is borrowed on the primary security of the general district rates, including the special district rate, would be 33,500*l.* money borrowed for waterworks and other purposes; there is power given under the Act to levy a water rate for the repayment of the 27,000*l.*, so that the water rate is the security for the repayment of the 27,000*l.*, but the general district rates are given in as security, but only collaterally.

3199. You have given us four different kinds of security; the special district rate, the general district rate, the water rates, and your own estate?—No; the estate has not been mortgaged.

3200. I thought you said that 5,000*l.* had been raised upon it for water?—There was power acquired under the Waterworks Act to borrow 40,000*l.*, 35,000*l.* upon the rates and 5,000*l.* upon the estate; 27,000*l.* has been borrowed, and the estate has been given in security for the 27,000*l.*

3201. I want to know the aggregate amount that has been borrowed, no matter what the security may be?—In round numbers it would be about 60,000*l.*

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3202. The rateable value being what?—35,000*l.* A Provisional Order was obtained some years ago enabling the local board to borrow to the extent of two years assessable value, so that we have power to borrow up to the extent altogether of 110,000*l.*

3203. What is the largest amount of rates that has been levied in one year to your knowledge for local government purposes?—3*s.* 2*d.* in the 1*l.*; that is to say, our general district rate is 2*s.* 2*d.*, and in addition to that there would be what is called the water rate of 1*s.* in the 1*l.*, that is for the repayment of the 14,000*l.* We have made one rate this year for the repayment of the instalments on the first advance of 9,000*l.* at 8*d.* in the 1*l.*

3204. Then you have to add special rates to those, have you not?—No; there are no special rates.

3205. Does 3*s.* 2*d.* in the 1*l.* represent the largest amount of rates for local government that you know of in one year?—Not the waterworks loan, that would be irrespective of what may be required to repay the waterworks loan. 3*s.* 2*d.* in the 1*l.* of the general district rate was required for the purpose of repayment of the first two loans, 14,000*l.* for water supply, for sewage works, and for establishment charges.

3206. Can you give us the maximum amount of rates in any one year for every purpose?—Hitherto they have been 3*s.* 2*d.*; at least last year that was so.

3207. Can you state the highest amount of poor rates in one year that you know of?—The highest rate I know of was in 1867, which then amounted to 2*s.* 4*d.* in the 1*l.*

3208. Does the amount of rates that you have stated include the lighting rate and the highway?—Yes, we have no highway rate now. In consequence of the enlargement of the district, the board taking in a portion of another hamlet, we did not see that we had power to make another highway rate extending over a portion of a place.

3209. How are your highways maintained?—Out of this general district rate of 2*s.* 2*d.*

3210. Is that levied in the proportion of one fourth on the land?—Yes.

3211. The area of your district being so nearly the whole of your parish, would not it have been better to have the district and the parish actually conterminous?—I do not think that the area of the district board and the area of the parish are so nearly conterminous; the population may be, but not the extent of the parish.

3212. How many guardians constitute the board of the union?—I do not know how many.

3213. How many members of the board of guardians are members of the district board of Llanelly?—There are no members of the board of guardians members of the local board, excepting those that are so *ex officio* as magistrates.

3214. Do not the functions of the board of guardians and your local board sometimes clash, as for instance in the inspection of nuisances?—We have met with no difficulty in consequence of the guardians being the local authority for executing any of the powers of the Nuisances Removal Act. During the time of the cholera in 1866 the Diseases Prevention Act was put into force, and the guardians being the local authority for executing that Act an arrangement was come to by which the local board carried out the provisions of that Act, paid the inspectors, and supplied medicines, and sent in their accounts afterwards to the guardians, which were paid.

3215. Have your local board got an inspector of nuisances or more than one?—Only one.

3216. I presume that the board of guardians have an inspector of nuisances?—Yes, I believe they have—the inspector of nuisances for the local board is the surveyor.

3217. Practically are your nuisances efficiently removed?—Latterly, I think they have been within the last two years. Some three years ago we had a little difficulty, especially with regard to pigs and pigsties. The difficulty that we met with in executing the provisions of the Act was that we could not see that the Act applied to the removal of a pig.

3218. Is there any doubt about the meaning of the Act?—There is power of course to remove the nuisance, but not the animal which causes the nuisance, unless evidence is produced before the justices to the effect that it is impossible to keep such an animal without being injurious to health. I happen to hold the office of clerk to the county justices, and I know the difficulties that we have met with under those summonses.

3219. Do you think that there is any defect of power in removing nuisances; for instance, the power as to entering premises?—We have found no difficulty at all under the 59th section of the Public Health Act of 1848. They generally comply with the 24 hours notice of the inspector. There is an assistant inspector for Llanelly, and scavengers and the inspector goes round daily, and if he finds any nuisances existing in the cottages or in the gardens he gives the parties notice, and as a rule we hear nothing further from him. The local board have never found any occasion at present to take any proceedings against parties.

3220. What is the nature of your sewage works—is it a complete system of drainage for the whole district?—It is not complete at present; the powers are being carried out, and the drainage extended. At present there is a main sewer running from the upper end of the town to midway between the town and the docks, and there it ended, and it discharged itself into an open sewer running along a large piece of flat ground, and the purposes for which we are borrowing the 2,000*l.* is to extend this line of drainage down to the sea.

3221. So that the discharge may be some way out into the sea?—It will be in the sea.

3222. Do all the private houses discharge into this main sewer?—All the new houses do; that is to say, all the houses that have been built in the district since the application of the Act of 1848, and within 100 feet of a main sewer.

3223. Is there any utilization of sewage for agricultural purposes, or is it all discharged into the sea?—It is all discharged into the sea. When the inspector finds it necessary to enter premises under this 59th section to remove nuisances, in case the notices are not complied with he removes it to the depôt of the board, and that manure is sold twice a year, but the sewerage all passes away into the sea. Before passing over the question of sewerage perhaps I may be allowed to make a remark as regards the auxiliary drains. We have found difficulty in getting the parties to connect with the main sewers. Under the 49th section of the Public Health Act of 1848, there is power given to local boards to compel the occupiers of houses who are within 100 feet of the sea on the main sewer to connect. It says, "Be it "enacted, that it shall not be lawful newly to erect "any house or to rebuild any house which may have "been pulled down to or below the floor, commonly "called the ground floor, or to occupy any house so "newly erected or rebuilt, unless and until a covered "drain or drains be constructed, of such size and "materials, and at such level, and with such fall as "upon the report of the surveyor shall appear to be "necessary and sufficient for the proper and effectual drainage of the same and its appurtenances; "and if the sea or a sewer of the local board of "health, or a sewer which they are entitled to use, "be within 100 feet of any part of the site of the "house to be built or rebuilt, the drain or drains so "to be constructed shall lead from and communicate "with such one of those means of drainage as the "local board shall direct." For instance, where there are half a dozen houses all within a distance of 100 feet, supposing the main sewer to be running down the centre of the street in front of them, and there is a side street as it were running up past the end house, there is no power at present to enable the

Board of Health to compel the owner of the premises belonging to the first house to allow the others to pass through them, so that the board must adopt one of two alternatives, they must either have the sewer made under the house, which they generally consider objectionable, or else they will have to make the subordinate sewer, by which I mean the sewer going up the side street, through the premises of all the houses until they get to the last one, which is within 100 feet, thereby being obliged to drain some half a dozen houses at the public expense for the benefit of the individual householder without draining any particular district.

3225. Have you no plan in view for utilizing your sewage?—Not at present.

3226. Have you a code of byelaws?—Yes, we have a code of byelaws.

3227. Are they sanctioned by the Secretary of State?—They have been sanctioned by the Secretary of State.

3228. Do they correspond with the Home Office code?—They do not, not altogether; some of them were framed by the members of our local board of health.

3229. Have you any suggestion to make as to byelaws; do you think that some subjects which are now treated by byelaws might be made part of general legislation?—I think as a principle the less that is left to local boards in the shape of making byelaws the better.

3230. Do you think that too much is left to byelaws now?—I think that many matters that could be incorporated in an Act of Parliament do now form part of byelaws; for instance, I think that there might be a general code of byelaws with regard to sewage.

3231. Have you had any difficulty in enforcing any of your byelaws?—No, we have had no difficulty in enforcing any of them. We have taken care not to attempt to enforce any that we could not see our way clearly to. We have a byelaw with regard to back lanes, that is to say, in connexion with the construction of new streets. One byelaw is to this effect, that such new street shall be provided with a back lane for the removal of refuse, of such width as the board may determine, unless by the special consent of that board. I have never felt justified in enforcing that byelaw, because it appeared to me to be rather beyond the powers granted by the Act of Parliament, the Act of Parliament merely giving local boards power to make byelaws with reference to new streets, and this byelaw going further than that, stating that every new street shall be provided with a back lane.

3232. Are you aware that that byelaw has been held to be invalid?—No; we have never taken any proceedings upon it.

3233. Or any similar byelaw?—No. I think that it would be desirable that there should be some power given to the local board to require the owners of properties who are laying out their property for new streets to show some means of communication from the back of the premises rather than having to go through the house for the removal of refuse.

3234. Have you had any difficulty in recovering any penalties?—No, I am not aware of any instance in which there has been a difficulty.

3235. Do you think that the proceedings for the recovery of penalties are such as they should be under the Act, or have you any suggestion to make?—I think on the whole they are. There is a difficulty with reference to recovering the penalty in connexion with lodging houses. There the complaint must be laid by the party aggrieved or by the local board or any officer of the board. I think that there should be a power given to the police, if necessary, to take out summonses against lodging houses for infringement of the bye-laws.

3236. What other officers are there of your local board besides yourself the clerk, and the inspector of nuisances whom you have mentioned?—There is an assistant inspector; there are no other officers except that we have a local engineer, but he is only an engineer appointed for the carrying out of specific works.

3237. Have you made any regulations as to the new buildings which you say are now springing up at the port, with reference to their plans?—We have byelaws with regard to new buildings, and a plan of every proposed new building is sent in and submitted to the board.

3238. Can the owners lay out the new streets as they please, or must they refer to you?—They must refer to the board before they can lay out their streets; and there is one instance which has come before me recently where the owner of the property submitted a plan, and on one side the street there was a back lane shown; he proposed building a number of small houses there, and on the other side he proposed building villas, and he showed no back lane. I did not conceive that we had power to require him to show a back lane.

3239. And he proceeded with his plan, did he, without any check?—Yes.

3240. Because he thought that you had not the power?—I considered the Act of Parliament, and felt that we had no power. In fact I communicated with Mr. Taylor upon the subject.

3241. When an owner lays out a new street who does all the kerbing, paving, and draining?—That is done before the street is dedicated.

3242. Is the drainage done upon a particular plan sanctioned by you?—Yes.

3243. Of course you would not adopt the street until the drainage was done according to your plan? Quite so. The difficulty that I met with with regard to the back lane was as to the construction of the 28th section of the 24th and 25th Victoria, chapter 61, in reference to the word "street," which says, "it shall not be lawful at any time or times hereafter within the district of any local board to "bring forward any house or building forming part "of any street, or any part thereof, beyond the front "wall of the house or building on either side thereof, "nor to build any addition thereto beyond the front "of such house or building on either side of the "same as aforesaid, without the previous consent of "such Local Board." There have been cases upon the point as to what is a new street, and it has been held that the word "street," under that section, applies only to a row of houses in some degree proximate and continuous, and not to a set of detached houses at irregular distances and not in a continuous line. It is a question to be determined by a jury whether or not a house does form part of a street. It has been held that some facing one way and some another, having no appearance of uniformity, is not a street within the meaning of the Act.

3244. Has there been any decision upon that point?—There has been a decision, in the case of Regina against Fulford, reported in the 10th Law Times, new series, page 346.

3245. (*Mr. Powell.*) As I understand you, the byelaws to which you refer were made under the 34th section of the Act of 1858, which contains the word "street"?—Yes.

3246. In order to ascertain the meaning of the word "street," as used in that section, you refer to a decision under the 28th section of the Act of 1861, where the word "street" is found, which decision the Court gave a certain interpretation to the word "street"?—Quite so. I go beyond that. We have a byelaw as regards the laying out of new streets. The 14th byelaw requires that wherever a new street shall be laid out it shall be provided with a back lane. That clearly, I believe, is beyond the power given under the Local Government Act, which only enables byelaws to be made with regard to making streets. The question is, whether it would not be desirable that the board should have power, if they deemed it necessary, to require a new street to be provided with a back lane.

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3247. (*Chairman.*) Have you any objection to the exemption of rural land from rating?—No, I think not. I think it is fair, or at any rate I think that land should pay a smaller proportion than houses, because sewage works and many works are not required for land that are really required for houses.

3248. Do you think that you ought to have greater power than you have at present to contract for works or to raise money?—There are certain powers now given for constructing works by private contract under a certain sum of money; beyond that sum there are certain forms to be gone through, such as making estimates and taking contracts. I think it is a very salutary provision that tenders should be received and contracts entered into for all works rather than to give local boards the power of doing the work themselves otherwise than by contract. I think that the ratepayers, as a rule, would be very much more satisfied to see that their works were done by contract than left to the discretion of the local board to do the work entirely themselves. I think that would be the experience that I should find at Llanelly at any rate.

3249. Is there any alteration in the law upon that point which you would suggest?—No, I think that the law gives sufficient power to local boards. I think that the ratepayers as a rule, especially at Llanelly, look very interestedly and closely into the acts done by the board, and when we take tenders for works I am always instructed to insert in the minutes of the board the amount of every tender which is submitted.

3250. Could you state to the Commission the rate of mortality at Llanelly?—I cannot tell the rate of mortality of the last two or three years. I have with me a report made by Dr. Hunter some three years ago, and at that time it was rather high.

3251. Can you state that the rate of mortality has been reduced by your public works during the last 20 years, or since 1850?—I should say that it has been. I am not prepared to state what the rate of mortality was at that time, beyond what appears in Dr. Hunter's report.

3252. Were there any particular localities in Llanelly where fever constantly existed before your works were made?—No, not that I am aware of, no particular parts. It was a singular feature in the time of the cholera that the cholera broke out at the highest point of the town rather than on the flats.

3253. Have you any suggestion that you wish to make which my questions have not drawn out?—There is one point which I should wish to refer to, and that is the disqualification of members of local boards, with regard to which I have found a difficulty. Under the 19th section of the Public Health Act of 1848, it is enacted amongst other things that if a member "shall in any manner be concerned in any "bargain or contract entered into by such board, or "participate in the profit thereof," he shall become disqualified. Under the 25th section of the 21st and 22d Victoria, chapter 98, it is enacted that "no "member of a local board shall vacate his office by "reason of his being interested in any sale or lease "of any lands, or any loan of money to the local "board." It does not appear quite clear from that section whether a member of a local board interested in any sale or lease of lands from the local board becomes disqualified. The point that I intended to bring before the Commission is this, that by the 25th section it is declared that no member of the board shall be disqualified in consequence of his being so interested. There is an instance now in our board in which one of the most efficient members of the board has taken the transfer of a lease that was granted some years ago by the local board to an individual,—that individual transferred it to two others, it ultimately became the property of a limited company, and the company becoming wound-up the property was sold under the direction of the Court of Chancery, and this member of the board bought that lease. Of course at the time the lease was granted, or rather at the time the property passed to him, although he was a member of the board, that could not possibly affect the rent or anything else payable under that lease; under my advice he discontinued sitting at the board, and his disqualification will be removed in the course of a few weeks. I took the opinion of Mr. Taylor upon it before acting upon it, and he seemed to make a difficulty over it. Mr. Taylor considered that both views were capable of being sustained by argument.

3254. (*Mr. Hibbert.*) Do you know who are the authorities in the other parts of the parish of Llanelly outside your local government district?—The board of guardians.

3255. Have you paid any attention to that part of the question as to whether the duties are properly performed by the guardians?—No, I have not. I believe that in the few instances that have been brought before the justices, the Nuisances Removal Act is very well carried out by the guardians in the union of Llanelly, but I think that as the local board of health is the local authority for carrying out the Nuisances Removal Act and most of the sanitary Acts, it would be very desirable that they should also be the local authority for carrying out the Diseases Prevention Act which makes the board of guardians the local authority. We felt that difficulty in 1866.

3256. You mean that you have two authorities acting in your district; that is to say, you have the authority under the Local Government Act acting generally in your district, but under the Diseases Prevention Act the board of guardians are the authority?—Yes, I know difficulty was met with at the time that it became necessary to put that Act in force. At the time of the cholera in 1866 the board of guardians were the local authority for executing that Act, not only beyond the district of the local board, but also within the district of the local board; and by arrangement at that time, the local board executed that Act, and the expenses were charged to the guardians afterwards, who paid them.

3257. Your suggestion is that the powers under the Diseases Prevention Act should be given to the local board?—That in all districts under the control of a local board the local board should be the local authority for executing the Diseases Prevention Act.

3258. (*Lieut.-Col. Ewart.*) You mentioned the fact that when the cholera occurred it attacked the upper part of the town; how was that part of the town supplied with water at that time?—The whole town is supplied by one waterworks, and was at the time that that occurred.

3259. In the new sewage arrangements to which you allude there is to be only one outfall or discharge towards the sea?—Only one.

3260. Will it be in front of the town where it is at all densely populated?—It may be rather thickly populated, but it is a small part of the town; it is near to the port in fact. There are three docks, and it is between the three docks. When Dr. Hunter made the report which I have referred to he suggested that there should be a ventilating shaft erected at one of the highest points of the town. That was done, but it was only partially carried out in consequence of there being simply a shaft without any charcoal or furnace or anything at the base of the chimney to destroy the gases as they passed up. It was thought generally, I do not know whether with any foundation or not, that those gases passing up through the chimney were driven down again upon the town, and especially on that part where the cholera broke out, which was just beyond and rather at a higher point than where the shaft was erected. In fact, that idea gained so much belief that the shaft was obliged to be taken away, and it has never been erected since.

3261. Have you any other provision for ventilating the sewers?—There are brick shafts from the manholes with charcoal baskets and open gratings.

3262. Are the sewers trapped?—Yes, I should

think that now they are trapped throughout the entire district.

3263. This system of sewage which you are now carrying out is being carried out, is it not, with money borrowed by mortgaging the rates of the place?—Yes.

3264. Had the plan for carrying it out been approved before you were allowed to mortgage the rates?—Of necessity they must have been so before we could get permission to borrow.

3265. (*Dr. Acland.*) Did I understand you to say that the local board executed all works connected with the cholera epidemic under the Diseases Prevention Act?—Yes.

3266. Should you advise in your own case, and in other cases also, that all such sanitary works should be done by local boards?—I think so for this reason, that under all the sanitary Acts the local authority is the local board in districts where there are local boards.

3267. Would the guardians object to it?—I apprehend that inasmuch as they came to an arrangement with the local board in 1866 that the latter should execute the Diseases Prevention Act, they could not possibly have any objection to the local board being the authority for carrying out that Act within their own district.

3268. Then you would confine the functions of the guardians really to their main purpose, the medical care of the paupers properly so called?—No. The board of guardians of course is the local authority for executing all the Nuisances Removal Acts beyond the district of the board, but they are also the local authority for executing the Diseases Prevention Act within the limits of the local board. It is only as far as a local board district is concerned that I make the suggestion, not beyond it.

3269. Was there any difficulty about the expenses of the guardians under that arrangement?—None whatever; we had no difficulty at all.

3270. Does the local board use the medical officer of the guardians at all for sanitary purposes?—No.

3271. Have you an officer of health of your own?—We have no officer of health.

3272. If there is any prevalent fever in any part of the town, how does it come officially to your knowledge?—I do not know that it comes officially in any way.

3273. It did in the cholera epidemic, for instance, did it not?—The local board took the initiative; it was not brought before them.

3274. (*Mr. Richards.*) Do you know how many houses built previous to the adoption of the Public Health Act in Llanelly are drained into the sewer?—No, I do not know that.

3275. Are there any considerable number of old houses not drained?—Yes; there are a considerable number that are drained. I should say that the great majority of the old houses of the better part of the town are drained into the main sewer.

3276. Is that the part where the working people live?—No, there would be no system of drainage there at all. As regards that part of the town, it was built upon prior to the adoption of the Public Health Act.

3277. Are the main sewers of the board extended into that part of the town?—To a certain extent they are. The drainage system is not complete at present, but it is being carried on.

3278. The difficulty to which you have referred in respect of the owners of property passing into the property adjoining them for the purpose of drainage would be got over altogether, would it not, if the board constructed a subordinate sewer at the back of the houses?—Yes.

3279. And would not that be at the same time a solution of all your difficulties?—Quite so; it is done in many districts, I am aware, but still that is done at the expense of the board, and not generally for the benefit of the ratepayers, but for the interest of a few houses.

3280. But if the drainage works are carried out by the board they are paid for out of the public money, the repayment extending over 20 or 30 years?—That I believe is the system adopted in Swansea.

3281. (*Mr. Powell.*) Have you in your district chiefly in use privies and ashpits, or waterclosets?—They are, I think, chiefly waterclosets or privies. In some instances there are neither one nor the other.

3282. When you use the term "instances," do you mean that there are three or four houses with only one privy, or that there are some houses without access of right to such accommodation in any way?—In many instances I have no doubt houses might be found with only one privy to three or four, and I think it possible that there might be found houses without any accommodation at all, in some of the very old parts of the town.

3283. Is your system of drainage so complete that the matters are satisfactorily drained off from your waterclosets?—Yes; that is to say, if the parties think fit to communicate their waterclosets with the main sewer.

3284. As a matter of fact, are there waterclosets not communicating with the sewers?—I am not aware of any.

3285. (*Chairman.*) I understood you to say that you took very good care that new buildings communicated, but you did not give us any very satisfactory account of the older ones?—No; there is no power given to the local board to compel the owners of houses that were built before the adoption of the Act to do any of those works.

3286. Is it your belief that any of the old houses built before the adoption of the Act have communicated with the sewer?—I think that some old houses have; my own house for instance was a house erected before the adoption of the Act, and that communicates both the watercloset and also the drains of the house.

3287. (*Mr. Powell.*) You stated in answer to several questions that during the cholera epidemic, by what you describe as an arrangement, the local board acted instead of the guardians, had you in mind the 11th section of the Nuisance and Diseases Amendment Act, 1860, which enables the Privy Council to confer authority upon a town council or local board in such case?—I have not considered that.

3288. But as a matter of fact, was application made to the Privy Council under that section?—No.

3289. You stated that a certain loan which you mentioned was to be repaid in 30 years, I presume that you meant that it was to be repaid by the community in 30 years?—Yes, by the ratepayers.

3290. But you do not mean that the lender lent the money for 30 years, each individual loan was probably for a short term, and your plan is to reborrow at the expiration of successive short terms?—No, it is 30 years from the advance of the loan in each case.

3291. Is the lender to remain out of his money for 30 years?—Yes, quite so.

3292. The money being repaid periodically by instalments?—Yes, by annual instalments; there is no sinking fund. The instalment is an annual instalment extending over a period of 30 years for the greater part of the loans. The loan of 10,000*l.* for markets is repayable over 50 years.

3293. You stated, with reference to your private Act for water, that if you had proceeded under the public Act you must have compensated certain owners, was there anything to your mind unfair or wrong in the owners being thus compensated?—At that time there was a very urgent want of water not only for domestic purposes but also for the purposes of works, and it would have caused a great delay in compensating the owners beforehand.

3294. Do you mean compensation by money or compensation by compensation reservoirs?—I mean compensation by money.

3295. Were those owners deterred from any opposition by the expense of opposing your private Act?

—No; there was a section inserted in the Act of Parliament giving them power to call upon the board to buy up their interest in the mills, provided they gave them notice within a certain time, in fact the board are by arrangements buying up the greater part if not the whole of the interests of the mills, they are negociating and they will buy up the whole of the interest with the exception of one, and I think it possible that that interest also will be purchased.

3296. How is the value to be arrived at?—The Lands Clauses Act applies to that case.

3297. You stated that you had only one inspector of nuisances, how many assistants has he?—One assistant.

3298. Can you give me the salary of each?—The salary of the surveyor is 130*l.* a year, and he is our inspector.

3299. What is the salary of the subordinate inspector?—1*l.* 2*s.* 0*d.* per week.

3300. Do you consider that the sanitary powers which you can exercise over the port are sufficient?—Quite so.

3301. How often does your local board meet?—Under our byelaws we are obliged to meet monthly, and of late years, in consequence of the business of the board having increased so much, we meet every fortnight regularly. We have a monthly meeting, and we adjourn that monthly meeting.

3302. Are plans for proposed buildings laid before those fortnightly meetings?—Yes.

3303. Then practically no one who proposes to build can be kept waiting more than a fortnight?—Not longer than 14 days.

3304. And you thoroughly exhaust the list of applications at those meetings?—Yes.

3305. Can you give any reasons why there should be a back road behind the villas which you have mentioned?—If the ground is already laid out for villas there can be no necessity for a back lane, but it might possibly occur that the owner did not carry out his original plan; he might partially. He might build one or two villas according to the opportunities which he might have of letting his land; and then possibly he might build three or four in a row.

3306. But in case of his abandoning that plan and adopting another he must lay his plans before you, must he not?—Yes, I am aware of that. He must lay his plan before us for amendment.

3307. Then I do not think that you can lay before the Commission any substantial reason why a back road should be insisted upon in villa property?—When a plan of that description comes before the board there is nothing satisfactory to the board as a means of communication with the backs of those houses for the removal of ashes.

3308. But surely considerations of that kind may fairly be left to those who wish to lay out their property for what would be described as eligible villas?—I think that is questionable. If plans are to be submitted to the local board for approval, I think power should be given to the local board to see that what they may consider the requisite requirements should appear upon the plan.

3309. You think then that in the case of property of that class more should be insisted upon than a speculator would naturally design for the benefit of his tenants?—Not more would be required of the owner upon a plan of that description than there would be if there were submitted a plan for building a regular line of buildings. There is nothing more required; it is merely putting him on the same footing as an owner who submits a plan for a regular line of buildings.

3310. (*Mr. Russell Gurney.*) Do I rightly understand you that a considerable number of buildings before the Public Health Act of 1848 would have no drainage?—I should think it is possible that there might be many houses in the older parts of the town in that state.

3311. Then that is because you have not constructed a sewer within the required distance, 100 feet of those houses, because, as you are aware, under the 49th clause of that Act if there is a sewer within 100 feet, whether the house is built before or after the Act, you have the power of compelling a drain, for the clause says: "If at any time upon the report "of the surveyor it appears to the said local board "that any house, whether built before or after the "time when this Act is applied to the district in "which it is situate is without any drain," he may be compelled to construct it?—Yes, but that does not compel him to communicate with the main sewer. I take it, he must have some means of drainage, but I conceive that it does not confer the power upon the board to compel him to drain into their main sewer.

3312. It says, "Or without such a drain or drains "communicating with the sea or a sewer as is or are "sufficient for the proper and effectual drainage of "the same." You do not want anything more than that?—I understood the question when put to me to be with reference to compelling the owners of houses to communicate with the main sewer.

3313. Is it not the fact that you have neglected to construct a main sewer at a reasonable distance from those houses?—I am not aware of any neglect on the part of the board. They have been carrying on their drainage works as rapidly and efficiently as they can do so, and they have laid out considerable sums of money for sewage purposes.

3314. But still there are a considerable number of old buildings which are without a sewer within 100 feet of the buildings?—Yes, no doubt of it.

3315. (*Mr. Cave.*) What is the tonnage of the vessels which ordinarily frequent the port of Llanelly?—The register tonnage of vessels for the year 1868 was 174,758; the tonnage of individual vessels from 520 tons downwards; the average tonnage of vessels 95 tons.

3316. Have you a local marine board?—No, there is no marine board; there is the Board of Harbour Commissioners; that is the only marine board.

3317. Do they take in hand the sanitary arrangements of the port?—No, they have nothing to do with the sanitary arrangements.

3318. Then has your local board the command of the police of the port and every authority over the port?—That part of the port that is within the district board they have; in fact the whole of the port is within the district board. The board has no control over the police.

3319. For instance, in the case of an epidemic or the report of disease on board ship, do you send or go on board the ships to see what state they are in?—We have never had any occasion to exercise those powers.

3320. Have you not had any outbreak of disease among the shipping?—No, we have not. I believe some few years ago there were one or two cases of yellow fever.

3321. What course was taken on that occasion?—I think there were only one or two cases. The local board at any rate did not interfere in the matter.

3322. You do not know whether the board would interfere in the case of an outbreak of dangerous disease in the port?—I apprehend that as far as the execution of the provisions of the Nuisances Removal Act and the Sanitary Acts is concerned, the local board would be the authority to interfere, and if it became necessary to put into operation the Diseases Prevention Act, then the board of guardians would come into play.

3323. In the case of the yellow fever, which is a very dangerous disease, you do not know whether anybody interfered on that occasion?—The chairman of the local board ordered the vessel to be moved from the docks and to be disinfected.

3324. Is there any authority or board for the examination of seamen, and certifying that they are fit to serve on board ship?—There is a medical inspector for the port.

3325. (*Earl of Romney.*) You stated that the main sewer discharged itself into the port very near

to some houses; what is the nature of the port of Llanelly? Is there a river discharging there?—The river Bury comes up there; it is a tidal river.

3326. How long has this sewer been discharging in that place?—The sewer is being constructed now. The 2,000*l.* that I spoke of which we are about borrowing, is for the purpose of continuing the main sewer from midway down to the railway station at a point where there are some ironworks down to the outfall.

3327. Is that sewer at present at work?—No, it is being constructed. The main sewer that was constructed by the board did not extend beyond about midway between the town and the railway station; then it goes into an open ditch, and that open ditch of course went down to the sea; there was no complete system of sewerage to the outfall.

3328. Have you any means of knowing whether there is likely to be an accumulation of this matter where the sewer will discharge itself?—I cannot conceive that there will be; it is a tidal river, and what sewerage passes the outfall will be taken away by the tide; it is in the tide-way.

3329. Do not you know that sometimes in the sea, and in tidal rivers, sewage matter descends at once, and settles on the shore?—I am not aware.

3330. (*Mr. Russell Gurney.*) You state that you are constructing this main sewer, what length have you constructed within the last twelve months?—None within the last twelve months, not of the main sewers.

3331. How long is it since any were constructed?—There have been subordinate sewers constructed, but as to the main sewer, I take it that not any of the main sewer has been constructed since the 14,000*l.* was expended; the 5,000*l.* and the 1,500*l.* were borrowed lately, in the year 1863.

3332. Since that time there have been no additional main sewers?—I should say there had not; not a continuation of them.

3333. I thought you said that you were continuing them as fast as you could?—We are now; the work is being proceeded with at the present time.

3334. (*Chairman.*) Have you anything else which you wish to suggest to the Commission?—I would suggest that there should be power given to the local board, if they think fit, to require a pig or any other animal to be removed or not be kept within a certain distance of a dwelling-house, in many instances they are kept just outside the doors.

The witness withdrew.

(20.) The Rev. Robert William Hippisley examined.

3335. (*Chairman.*) You are rector of the parish of Stow-on-the-Wold in Gloucestershire, are you not?—I am.

3336. What is the population of Stow-on-the-Wold?—The parish contains about 1,600 persons.

3337. Can you state the acreage of the parish?—I do not think it is more than 16 acres, it is a very remarkable place, there is no land belonging to the parish, but a small close, which is mine as rector, of about two acres of land.

3338. What is the nature of your local government?—We have nothing but the vestry under the Sanitary Act of 1866, and all the powers of the vestry have been delegated to a committee of the vestry.

3339. Under what powers are they enabled to delegate their functions to a committee?—They have power of so doing under Part I. sect. 4 of the Sanitary Act of 1866. The 4th section of that Act says that, "Any "sewer authority may from time to time, at any meeting specially convened for the purpose, form one or "more committee or committees consisting wholly "of its own members, or partly of its own members "and partly of such other persons contributing to "the rate or fund out of which the expenses incurred "by such authority are paid, and qualified in such "other manner as the sewer authority may determine, and may delegate, with or without conditions "or restrictions, to any committee so formed all or "any powers of such sewer authority, and may from "time to time revoke, add to, or alter any powers "so given to a committee." It appears also that the proceedings of such committee are not invalidated by any vacancy or vacancies amongst its members; and there is another clause which says that "A sewer "authority may from time to time add to or diminish "the number of its members or otherwise alter the "constitution of any committee formed by it, or "dissolve any committee." And the last clause explains the responsibilities of a vestry, notwithstanding a committee has been appointed: "A committee of the sewer "authority shall be deemed to be the agents of that "authority, and the appointment of such committee "shall not relieve the sewer authority from any obli-"gation imposed on it by Act of Parliament or otherwise." Under this section of the Act we did, almost immediately after the passing of the Act, appoint a committee of 15 persons, but of those 15 persons, in consequence of the seeming insolent conduct of some of its members towards the others, and the withdrawal of another who was found to be ineligible, the better portion of that committee resigned, and left the affairs of the vestry in the hands of I do not believe above nine persons.

3340. Do you mean that six of 15 resigned?—Yes; and at a vestry meeting, held Sept. 20th 1866, one more resigned.

3341. Was there any quorum appointed?—When the committee was first appointed the quorum was seven.

3342. So that their resignations did not reduce the committee below the quorum?—No; and after the resignation of these six members an apology was made to them, and they were asked to return to the committee, which they did. At a subsequent vestry meeting, held October 5th, 1866, they were re-elected in fact, but strange to say, at the very first meeting of the committee, held October 9th, 1866, that occurred after they were so re-elected, the same sort of insolent behaviour was shown to them, and they then again resigned.

3343. How many this time?—The same persons, leaving the affairs of the vestry to the remainder. Then, in consequence of the split in the committee, the vestry, of which of course I as rector of the parish am *ex officio* chairman, felt very anxious that the committee should not involve the vestry or the sewer authority in any legal liabilities; because, as you will observe, by the last clause of the fourth section of the Sanitary Act, 1866, the vestry is to be the responsible body, and not the committee of vestry. So I proposed that there should be periodical reports given of the progress made by the committee of the vestry in the work intrusted to them, and they agreed. I was for having very frequent reports. However, they agreed at that time to a monthly report; but that agreement on the part of the existing members of the committee has never been faithfully carried out, so that the ratepayers generally have been left in perfect ignorance of the committee's proceedings almost from the first day they commenced their work as a committee up to the present time.

3344. Do you mean that there have been actually no reports during the last three years?—There have been five reports given after a very great deal of pressure. The date of the first report I do not remember. The second is dated December 21st, 1866; the third, February 8th, 1867; the fourth, June 6th, 1867; the fifth was printed and circulated August 29th, 1868. The Sanitary Act was passed in September 1866, and in neither of the two first reports is there any mention made of a very important part of the proceedings of the committee immediately after they commenced work, and indeed it is to this

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omission I believe all our trouble from which we are suffering is very much to be attributed. I think you will hardly be able to understand our case without first of all knowing how Stow has been supplied with water in early times. Before the passing of the Sanitary Act it was supplied with water by different ways. Before any persons thought of supplying it in any extraordinary manner, it was supplied from public reservoirs, not in the parish of Stow, but in the adjoining parish of Broadwell. Those reservoirs were awarded at the time of the enclosure of Broadwell parish in the year 1793, not to Stow only, but to the use of the public in general; but although the public in general had a right of access to those reservoirs and to take water therefrom, yet in order to enable the Stow people, who were the persons who wanted the water more than any other people, to obtain it without difficulty, and that they might have and enjoy free ingress, egress, and regress with water carts, tuns, and other carriages, horses, and otherwise for ever, provision was made in that Act of Parliament that a proper road should be constructed and kept in repair for ever at the expense of the parish of Stow. Those reservoirs being in some instances at least half a mile off or more from some of the cottages in Stow, I felt extremely anxious that a more convenient supply should be obtained for the parish. But I must tell the Commission that that was attempted to be done in the year 1836 by a gentleman of the name of Pole, who had property in an adjoining parish. He at his own expense, without parliamentary powers, did erect works on his own land for the purpose of pumping water from a spring to be conveyed through pipes to the town of Stow. Those waterworks were closed by Mr. Pole in the year 1863, finding that they were totally inadequate to meet the wants of the population and very much out of repair. As Mr. Pole was obliged to give up his works, I suggested to some of the principal ratepayers the propriety of endeavouring to get parochial waterworks by adopting the Local Government Act, 1858, and we should have obtained the benefits of that Act had it not been from some error in declaring the result of the poll. I forget exactly what the error was, but there was some irregularity which prevented our then adopting the Act, and we were obliged, by order of the Secretary of State, to go through the whole ceremony of polling again. On the first occasion we obtained it by a large majority, but on the second it was lost, through the opposition of some influential cottage owners, some who thought that it would bring heavy expenses on them. I should mention that we petitioned the Secretary of State, and had the permission of the Secretary of State for the formation of a district, and we did form a district, and I have here the map which was arranged at that time (*producing the same*) for the purposes of the Local Government Act.

3345. When did you petition the Secretary of State?—We petitioned the Secretary of State, and the district, as it appears on the map, was agreed to by the Secretary of State, in the year 1864.

3346. Was that the year after you had attempted to adopt the Act?—Yes; 1863 was the year when the late Mr. Pole closed his waterworks, and in 1864 we had permission to form a district.

3347. Was that prior to the public poll, or after?—Before the polling.

3348. Then the petition to the Secretary of State was the first step that was taken towards the adoption of the Act?—Yes. The district so formed by the Secretary of State does not comprehend merely the parish of Stow-on-Wold, but also portions of Maugersbury parish, upon which the town of Stow-on-Wold is built. Although this district, as shown on the map, was formed for the purposes of the Local Government Act, it is not a district which comes under the Sanitary Act. We have no power, as a vestry, to get any water supply for persons occupying houses, or to do any work under the Sanitary Act, I apprehend, out of the parish of Stow-on-the-Wold,

3349. Do you mean that the provisions of the Sanitary Act of 1866 would apply to the parish alone?—Yes, to the parish of Stow-on-the-Wold alone.

3350. And the district proposed in 1864 for general local government would include several other parishes?—It would include portions of one other parish, the parish of Maugersbury.

3351. Of course your area of 16 acres would be a great deal too small for a district of local government?—Quite so; such an area would not have got the benefit which we wanted for the whole town of Stow, because there are as many as 80 houses, forming the town of Stow, situate in the parish of Maugersbury, and several in the parishes of Broadwell and Lower Swell, but no portions of Broadwell or Lower Swell are included in the district on the map.

3352. Do you make that last remark meaning that even if you got your district in 1864 there would be a clashing of jurisdiction between that district for general local purposes and the action of the vestry under the Act of 1866?—Yes; under the Act of 1866 we should not be able to give the water supply, which we wished to have done in the year 1864. If the district did not comprehend all the houses, wherever situate, forming the town of Stow, there would be great difficulty in carrying out an efficient water scheme. The inhabitants of those parts of the town not in Stow parish, would be a great nuisance from their want of water, and they might get the benefit of a water supply without paying for it, which would be unfair. Mr. Pole having given up his works in the year 1863, and the Local Government Act lost, in 1865 some persons in Stow proposed that a company should purchase Mr. Pole's works, and for that purpose a great many ratepayers in Stow formed themselves, in the spring of 1866, into a company under the Limited Liability Act, and entered into negotiations and agreed with Mr. Pole for the purchase of his old conduit pipes, and for the lease of the works situated upon his property in the parish of Lower Swell. I very much objected to any waterworks, especially those abandoned by Mr. Pole, being carried out by means of a company, feeling sure the company, as Mr. Pole before, would never be able to carry out a really efficient water scheme. My objection to a water company led to my wishing for the Local Government Act. When the ratepayers and owners had determined not to adopt the Local Government Act, those people who had formed themselves into a company meant to have gone on with their project of having waterworks of their own, but this Sanitary Act of 1866 made it quite impossible for them to carry out their project.

3353. Could not the vestry have contracted with the company under the Act?—Yes; and before the passing of the Sanitary Act, 1866, I was prepared to suggest to the vestry the propriety of contracting with the company, provided the company showed us that their works would be efficient. Indeed, I told the directors of the company that if they could convince me that their water scheme would obtain for the parishioners an equally efficient, permanent, and cheap water supply as we could get under the Local Government Act, I thought we might agree to it. But I apprehended that the company would not be able to carry out their works efficiently without Parliamentary powers enabling them to lay their pipes as they might think proper through the streets of the town, and the directors informed me they had no intention of applying to Parliament for an Act.

3354. Then what prevented the waterworks was not the Act of 1866 but the inefficiency of the company?—Yes, the inefficiency of the company to provide such works as they saw themselves could be obtained under the Sanitary Act 1866.

3355. How did the Sanitary Act upset that project?—In this way: they saw clearly that they could never carry out their works without a special Act of Parliament, and that there was not the slightest chance of their obtaining a Special Act of Parliament after the passing of the Sanitary Act, which rendered

it so easy for any parish to obtain a perfect water supply without any company. To go on with my story, it appears, from the minute book of the committee, which I persisted in seeing and have seen, that at their very first (October 9th, 1866) meeting after the second retirement of those members of the committee to whom I have alluded, they were waited upon by a deputation from the wafer company, offering the old pipes the water company had agreed to purchase from Mr. Pole, and the lease of the old works, to the committee of the vestry, the committee of the vestry themselves being, as then existing, for the most part members of the water company themselves; and it is curious that, without ever inquiring whether the directors of the water company had the permission of the shareholders to sell, which they had not, or into the value of the old pipes or of the waterworks, the committee, on that very first occasion of meeting for the transaction of business, unanimously agreed to purchase the old pipes of the water company for the sum of 150*l.*, and to a lease of the old works for seven years at a rental of 12*l.* per annum. I was told this a day or two after, but I could hardly believe it, so that at the first vestry meeting called for the special purpose of inquiring into this matter, I put some plain questions to the members of the committee present, and after much pressing obtained a sight of their minute book, and so learnt what the committee had done. This happened very soon after the passing of the Sanitary Act, *i.e.* January 25th, 1867. In the first two reports which the committee gave us there is not one word declaring that they had entered into any contract or negotiation with Mr. Pole or his representatives for the purchase of those old pipes; nor afterwards, in the specifications laid before the vestry in a hurried way for the approval of the vestry, is there any mention made of their intention to make use of the old pipes. The vestrymen felt sure that they meant to do so if they could, because several members of the committee at vestry meetings said so repeatedly, but still in the specifications laid before the ratepayers for their approval, there is no mention made of their intention to use those old pipes. I all along thought that it was utterly impossible that the old pipes would be found useful, and it has turned out just as I supposed. Having been under ground 30 years, they are full of holes, fouled, and perfectly unfit for any purposes connected with water supply. By patching them and so forth the committee did use them for a short time after they opened the works, and perhaps would have gone on doing so to the present moment had not the water with which they so supplied the inhabitants proved of the most polluted kind. A medical man of Stow, a Mr. Hayward, felt very anxious when he saw how terribly the water was polluted, and asked me to help him to get the water analysed. After a very great deal of trouble, that is, after much resistance on the part of the committee, we got an order from the Secretary of State, through Mr. Taylor, insisting upon samples being sent to London, upon which I got several samples sent and analysed, and the analyses showed how extremely polluted it was, and how calculated to injure health. Upon this report of the Government analyst, Dr. Frankland, the Secretary of State ordered the works to be closed, and from that day to this the works have not been in use at all.

3356. How did it happen that that committee, working so badly, the vestry went on re-electing them annually?—We have had numerous vestry meetings for the purpose of altering and revoking the powers which they supposed were given to them in the first instance, when the vestry delegated to them all the powers of the vestry—powers which we never meant to give them, but which they assumed—and which, we are told by Mr. Taylor, secretary of the Local Government Act Office, were given to them. We have tried over and over again to dissolve them, but inasmuch as some of them are the leading and largest ratepayers, they have some influence in the place, and get all the small ratepayers to vote for them, and they vote also for themselves, and so there is no possibility of getting rid of them.

3357. Are they annually re-elected?—They are not re-elected; they can remain in office until they are turned out. The vestry is a permanent body, and I believe the powers which it delegates to its committee are permanent, unless revoked or unless they resign their powers to the vestry. If they were annually elected, the parish would not be in its present unhappy state, because their accounts would of course have had to be audited before they resigned office; but they have been in office ever since the year 1866, and refuse to have their accounts audited.

3358. What suggestion would you make as to remedying such a state of things, either as to the law or the authority which you think would be preferable in Stow?—I think, in a small place like Stow, it is very hazardous to entrust the carrying out of the sanitary laws even to the whole body of vestrymen, and it is especially hazardous to entrust such important and difficult works as come under these laws to a committee of the vestry.

3359. You think that altogether the vestry is an improper authority to intrust with such powers?—Certainly, from my experience of Stow, I think the vestry of such a parish is a very improper authority; our vestrymen, with the exception of a very small number, do not understand the thing at all; they do not see the necessity of any legislation upon such matters, to begin with. After the committee were appointed it is quite clear that they had not the slightest idea of what the duties of a committee were, because otherwise they never would have proceeded so imprudently as to purchase the old material in the hasty manner they did. Ever since that time they have most carefully refused to lay their books before the ratepayers in vestry assembled, either their minute book or their account book. I believe I was the only person who knew at all what they were about. They were aware of this, and so they particularly refused to let me see those books. On several occasions I applied at the office of the clerk to the committee for a sight of the books, and it was only by almost threatening legal proceedings if he did not let me see them, that I did obtain a sight of them. I took copies last month of all the entries their ledger and banking book contained, but there had been no entry made in the ledger since September 1868, and the banking book was only made up to the end of 1868, so that I am still in ignorance of a considerable part of their expenditure.

3360. Of what union is Stow a portion?—It is the union of Stow-on-the-Wold, and it comprises 28 parishes, containing together about 50,000 acres, and a population of about 5,000 persons.

3361. Do the board meet in Stow?—Yes.

3362. Do you yourself think that, supposing that union was made a district for local government, the board of guardians would be an efficient authority?—No, I do not. I think the guardians of Stow, being themselves generally cottage owners, would be using their influence with the guardians of other parishes for the prevention of any expenditure on account of any sanitary improvements in their parish likely to involve themselves in much expense. The houses in Stow almost entirely belong to people who only think of their rents. They build them up very badly. The cottages are not large enough; they are badly ventilated, badly drained, without sufficient or decent privies, and so on. The guardians seem to me to be negligent in carrying out any sanitary improvements in the union. They seem to me never to make any move until they are moved.

3363. Would not a much larger body like a board of guardians not only act in a more intelligent and public spirited manner, but would not they also have less inducement to unwise economy, as there would be certain rates in particular localities, instead of generally?—I have been a guardian myself, and from my own observations, when attending the board, of the conduct of the guardians in all matters involving expense, I think there was often an unwise economy exhibited.

3364. Have you ever considered whether the board of guardians which meets in Stow might make a good

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local authority for the whole union?—I doubt it very much indeed. My opinion is that, with the view of improving the sanitary condition of the country, printed questions should be sent to the overseers of every parish from the Local Government Act Office, which they should be bound to answer faithfully as to the sanitary condition of their parish, and then there should be an order given to have the work done that is evidently necessary.

3365. Who do you mean should make the order, and to whom should such order be made?—I think that the order should come from the Secretary of State. There should be a form of printed questions sent to the overseers of parishes, to which they should be bound to give faithful answers from time to time as to the condition of the parish, and then the Secretary of State through the Local Government Act Office should have the issuing of any orders that may be thought proper.

3366. Having found the vestry so utterly inefficient, and much worse even than the board of guardians, what sort of body did you expect to get under the Local Government Act if you had succeeded in adopting it?—Under the Local Government Act we should have got a better board; it would have been composed of persons rated at least at 15*l.* a year.

3367. Do you think that a higher qualification would have constituted a higher class of men on the board?—Yes, I think so; some members of the Stow committee at the present time can really do very little more than write their names.

3368. Although you are out-voted by the great mass of the ratepayers in the vestry, still, according to your account, there are some leading men amongst them; how is it that the leading men have not had influence enough to get a better committee?—All the committee at the present time are Dissenters but one, and that one cannot be called a sound Churchman, as he often attends dissenting places of worship. I think this is partly the reason why the leading men of the committee have not been able to get some good men to join them, and also because their conduct has been so disgraceful with reference to the purchase of the pipes, &c.

3369. Can you state to the Commission the rateable value of Stow?—It is 2,200*l.* a year or thereabouts.

3370. Can you tell us about what the local rates of all kinds amount to in the pound or have ever amounted to?—Formerly the rate in the pound was very great indeed, but since the new law throwing the rates over the whole union, Stow having no land of course has derived immense benefit. On account of the poor the rates are very low indeed, but on account of this water business they have been very frightful indeed. Since the year 1863 there have been precepts, there is one out now in fact, so that there will have been 500*l.* raised by precept for this water business in Stow since the year 1866 to June 1869.

3371. You have highway rates I suppose?—The highway rates are now paid out of the poor rates.

3372. Could you state to the Commission what those rates have ever amounted to altogether in the pound?—The poor rates, which cover also the expenses of the county burial board and highway board, were, in 1865, 4*s.* 6*d.* in the pound; 1866, 3*s.* 8*d.* in the pound; 1867, 2*s.* 8*d.* in the pound; 1868, 3*s.* 4*d.* in the pound.

3373. Stow-on-the-Wold stands on a hill, does not it?—Yes.

3374. What is the drainage and sanitary condition of the town?—The drainage I believe to be very far from satisfactory.

3375. How is it that a town standing on a hill should have such bad drainage?—The drainage is simply of this kind. People dig till they get to what they call a swilley, which is a fissure in the rock, and directly they get to that they are satisfied, and think they have got all they want in the shape of drainage. The sewage which goes into those fissures must of course pass out somewhere, as we have just recently discovered. It no doubt is the cause of the pollution found by our county analyst in the wells which exist in the town. The waters also of the reservoirs, awarded as I have already stated, have been recently analysed by order of the Secretary of State, and they have been found even worse than the waters in the well which the committee of the vestry bought to be the water supply for the town of Stow. I am satisfied that this parish well and the public reservoirs are capable of being remedied, and that the pollution may be got rid of.

3376. But from your want of local government those necessary public works remain undone?—Yes.

3377. I think that we gather generally from your evidence that you think that the vestry are a wholly incompetent body, and that by adopting the Act of 1858 you would be able to get a good body in Stow for the local government of the place?—Yes.

3378. And that, if so, the Sanitary Act of 1866 should no longer vest the powers of local government in the vestry, but that such powers should then vest in this superior local authority which you think you might get under the Act of 1858?—Yes.

3579. I think I gather from you that your opinion is that the Secretary of State should have more power of interference?—Yes; we have applied to him continually without effect. Indeed, there is now a letter before him written by myself requesting an inquiry under the 49th section of the Act into certain grave charges which I have felt it my duty to bring against our committee; as yet I have received no reply to that letter.

3380. Have you ever considered whether you might have a superior authority somewhat short of the Secretary of State, say in the quarter sessions, which might enable you to carry out your powers better?—I have never thought of that; but an appeal to such an authority would be expensive, I suppose. The great thing is to simplify matters as much as possible, and make redress as easy as possible, whereas it appears under the Sanitary Act, 1866, the difficulty of getting any sort of redress is enormous.

3381. Have the board of guardians any inspector of nuisances at Stow?—They have just appointed one for the whole union.

3382. Is there any inspector of nuisances for Stow?—None has been appointed, as far as I know, for Stow.

3383. I presume that the nuisances exist without being removed?—Yes.

3384. How are your vestry accounts either examined or audited at all?—Under the Sanitary Act there is no provision whatever made for auditing the accounts. I have continually reminded the committee of vestry, through their clerk, that those accounts should be submitted either to the vestry or to some auditor appointed by the vestry or to the auditor of the district, but I have always received the same answer from the committee, that as there is no provision made for the auditing of such accounts, they must refuse to allow the accounts to be audited. Their real reason for refusing, I believe, is because they know or feel pretty certain that there are many items in those accounts which, if they were submitted to an auditor, would be disallowed.

3385. I think that you have stated to the Commission generally, that the public works which require to be made in Stow are not made, and that there are other ways in which this committee have spent their money unwisely?—Yes, I consider that they had no power whatever to apply any portion of the money intrusted to them to the payment of the 150*l.* for the old pipes, or to the payment of interest upon this money which they borrowed without the sanction either of the vestry or Secretary of State.

3386. Are there any other cases besides those where they have exceeded their power?—Yes, they have also applied a portion of this money, which has been entrusted to them, to the creation of works out of their district, or the parish of Stow.

3387. How could they get the funds for doing that?—They have obtained a loan of 2,000*l.* under the sanction of the Secretary of State, on the under-

standing, I believe, that certain specifications and plans should be carried out, but they have departed from those specification and plans, and they have used the money as they thought fit.

3388. Are they not liable to legal proceedings for this?—I have no doubt they are, and that we must take legal proceedings to recover the damage that we have sustained.

3389. How did they raise the loan?—They raised the loan by the permission of the Secretary of State; they borrowed 2,000*l.* of a person in the neighbourhood for a period of 20 years; they promised him, I think, 5*l.* per cent. interest, and they have got to pay off the principal by instalments.

3390. Upon what ground could they have got the consent of the Secretary of State to such a loan?—On the grounds that a more convenient water supply was essential for the place.

3391. Do you mean that they have mis-spent the loan raised for that purpose?—They have illegally applied the money that was so entrusted to them.

3392. Has there been any other money raised by loan besides that in Stow?—No loan; but money to the amount of 500*l.* has been or is about to be raised by precept in addition.

3393. But the committee of the vestry have not raised any other loan?—They have applied to the ratepayers, in vestry assembled, for a further loan, but I, as chairman of the vestry, have refused such a question to be entertained of a further loan till their accounts have been audited and passed, so that the vestry might see the necessity thereof.

3394. In consequence of the misconduct on the part of the committee, if I understand you aright, it is the vestry that are liable?—The vestry appears to be liable, if the committee of vestry is in default under the 49th section of the Sanitary Act, 1866.

3395. For the misdoings of the committee of the vestry would the vestry be liable?—I understand so; I should imagine that the vestry are liable for their acts and deeds.

3396. Do you believe that the vestry are liable to repay that money which the committee have wrongfully borrowed?—The question is whether the minority of the ratepayers in vestry assembled can be bound by the majority who choose to do wrong. There are a number of ratepayers in Stow who are very much disgusted of course at the proceedings of the committee and would be glad to see them out of office, but they have not the power because they are in the minority, and that minority I attribute in part to the members of the committee always voting for themselves.

3397. Do you believe that the committee can be made responsible for this money, or do you believe that the vestry is responsible?—I think that the committee can be made responsible, because they have kept the vestry in ignorance of their acts and deeds. The ratepayers in vestry assembled have sought to know, but the committee have refused to inform them, of their acts and deeds.

3398. (*Mr. Cave.*) You propose to have a local board instead of a vestry?—I think that a local board under the Local Government Act would be very superior to the committee of vestry.

3399. What sort of material would you have for the composition of the local board?—I think that that is sufficiently provided for in the Act, that they shall be persons rated at 15*l.*

3400. Your vestry appears to have broken down altogether practically, what materials would you have in the place to get a better body of working men as a local board?—I do not think really that those difficulties would have arisen if there had been proper provision made in the Act for the auditing of the accounts. This committee of the vestry very soon discovered that there was no such audit imposed upon them, and they have taken advantage of the defect of the Sanitary Act in this respect. They thought that they could do just what they pleased with impunity.

3401. Would not the local board be composed of the very same persons with the advantage of a compulsory audit?—It would certainly, but still it would exclude some persons who are now members of the committee.

3402. (*Mr. Powell.*) Have you formed in your own mind any idea what you would wish the district of the local board to be?—Yes, I should like it to be the one formed under the sanction of the Secretary of State for the Local Government Act, because the district then would comprise the whole town of Stow. The parish does not comprise the town of Stow. There are a great many houses out of the parish which require sanitary works quite as much and perhaps more than those which are actually in the parish itself.

3403. (*Mr. Shaw.*) I think one item of your notion of amending things would chiefly be in having a higher property qualification?—That is one thing. You could not have a very high one in Stow, because you would not get a sufficient number to be on the board if you did, the place being so poor, but I think that the qualification that is now required under the Local Government Act would secure a very much better board than we have now.

3404. How far would it meet your views if things were kept as they are, and if a county board or some intermediate board were established superior to them, of course presumably being composed of persons of a much higher qualification, having power to control the proceedings of this local board and acting as a court of appeal from this board if they did wrong?—I think that would be a very valuable suggestion.

3405. Would you rather have a direct appeal to the Secretary of State?—I would rather appeal to the Secretary of State, provided he was obliged to entertain all reasonable appeals. No appeal, I think, should be entertained unless signed by at least three persons. I cannot help thinking that if an inquiry is made into the wants of the parish by question and answer, and this inquiry, duly filled up, were referred to the Local Government Act Office, an order might be issued to the local board that they should do things manifestly necessary for the public health, of course laying plans and specifications again before the Secretary of State for approval before anything was actually done.

3406. The main difficulty is that the Secretary of State seems to have the power given to him, and you have not found it out?—I have often appealed to the Secretary of State under the 49th section of the Sanitary Act, 1866, which is as follows: "In cases "where danger arises to the health of the in-"habitants from the insufficiency or unwholesome-"ness of the existing supply of water, and a proper "supply can be got at a reasonable cost, the said "Secretary of State, if satisfied after due inquiry "made by him that the authority have been guilty "of the alleged default shall make an order; and "if such duty is not performed by the time limited "in the order, the said Secretary of State shall "appoint some person to perform the same." The answers I have received have been always to the same effect, that the Secretary of State has no power to interfere under that section till it can be shown clearly that the vestry, or the committee of the vestry, is in default I have now made specific charges, namely, that they are incompetent, and that they have misapplied money, and that it is owing to their incompetency and misconduct we are at a stand still. I think probably we shall get some redress now, or I hope so.

3407. You would rather that the power was left to the Secretary of State, but much more stringent and effective?—Yes.

3408. (*Mr. Richards.*) You are of opinion that if your vestry believed that if the Secretary of State would order the works to be done they would set about the works themselves in earnest?—I think they would feel themselves obliged to do so.

3409. Do you think that the vestry would rather do it than allow the chance of the Secretary of State performing the work himself if they believed that the details of the work would meet with his consent?—Some of the ratepayers in Stow have all along

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wished that the Secretary of State would send somebody down to construct the waterworks, believing that the work, under such management, would be better and more cheaply done too in the end than if left in the hands of the vestry or committee.

3410. (*Mr. Bircham.*) Was it the disinclination of Stow to spend money on the works which caused the necessity of doing that?—In the first instance they did not want to spend any money at all, but when they found that they were obliged to spend money, they did not hesitate to do it, and they have spent 2,500*l.* it appears, and at present without any result, as far as a water supply goes.

3411. The area of that district which you would have formed under the local board would have included what amount of population?—It would have included about 300 or 400 persons probably more than are now included.

3412. Would the rateable value of the district have been largely increased?—It would, because the district then would have embraced a good deal of property which would have produced an income.

3413. Substantially, would not the incidence of the expense have been on the same shoulders?—For the most part the expense would have had to be borne by the same persons. The same works would have done for the whole district, with some extra piping and water taps.

3414. My question rather was, whether the rateable value, that is, the assessable value, would have been pretty much the same, and therefore the incidence of the expense the same too, substantially?—The rateable value would have been increased, because more houses and more land would then have been made liable to the rates.

3415. Do you, under such circumstances, think that a larger area, such as the size of an ordinary poor law district, would furnish them with a better local governing body than the board of guardians?—Yes, but I do not think that we should like to trust the affairs of our parish to persons who have no interest whatever in it.

3416. You have come to a dead lock, have you not, amongst yourselves?—Yes, but still I think the people of the place are in the first instance the right persons to take care of their parish; but if they will not attend to the sanitary affairs of their parish, they ought to be made to do so by some superior authority, and, as I have said, I do not think a better could be found than the Secretary of State for the Home Department.

3417. Would not it be probable that a local body elected from different parishes, having the money qualifications which you suggest that they should have, would give you higher intelligence, and would also remove their action a little further from the operation of close local prejudice?—I think that, but still, people are so much mixed up together who live in country places, that it is very difficult to get a really sound unbiassed opinion from them on any matters.

3418. If you were to substitute as the governing body the board of guardians, or the district local authority, would not it be an improvement upon the vestry as a general rule?—It would be an improvement upon our vestry; anything would be an improvement upon that, but still I should like to be under the Secretary of State, in the way I have already said.

3419. (*Sir Thomas Watson.*) In the absence of all proper and effective drainage which you have mentioned, and in fact the drinking water under chemical analysis having been found to be very impure, can you tell us what has been the state of the health of Stow-on-the-Wold?—I really think, notwithstanding all this, it is a healthy place.

3420. Have you had no epidemic disorders prevalent there?—No; I do not think that the people look healthy; we have a good many cases of paralysis in the parish, and rheumatic fever, and disorders of that kind, but we have seldom any small-pox or fevers.

3421. Have you ever had cholera there?—No.

3422. Do you happen to know what the rate of mortality is?—There have been 50 deaths in the town of Stow between 22d February 1867 and 30th June 1869.

3423. (*Mr. Whitbread.*) What was the nature of those works upon which they borrowed money under the sanction of the Secretary of State?—Waterworks to be constructed in accordance with plans and specifications prepared by an engineer and approved by the Secretary of State.

3424. What was the amount of the loan?—2,000*l.*

3425. How has the money been spent?—From what I know of the entries in the ledger of the committee, and their banking book, it has been spent upon the new works which have been created, and upon the payment of the debt incurred in the purchase of those old pipes of Mr. Pole, as I mentioned before.

3426. I think you told the committee that they borrowed it upon one plan which had received the approval of the Secretary of State, and spent it upon another plan in another district?—The money has been borrowed upon the rates of the parish of Stow-on-the-Wold, for works to be constructed in the parish; they have spent some portion of the money illegally.

3427. In what consists the misapplication of the money?—They have misapplied the money, in my opinion, in paying 150*l.* thereof in the purchase of the old pipes, and 3*l.* 2*s.* 1*d.*, the interest during the time they borrowed the 150*l.* from the Gloucestershire Banking Company at Stow, at five per cent. interest; also in not keeping closely to the plans and specifications approved by the Secretary of State.

3428. Were the works sanctioned by the Secretary of State?—No, not as the committee have carried them out.

3429. Has the money been substantially applied to the purpose for which it was borrowed?—I think a large portion has not.

3430. Has the Secretary of State made any representation upon the subject to them?—No, not at present, with the exception of recommending them to have their accounts audited. Application is now made to him to interfere upon that ground.

3431. But he took no steps to acquaint himself with them?—He has not yet done so.

3432. (*Licut.-Col. Ewart.*) Have you any system of inspection in the parish for health purposes?—No.

3433. What would be your views with regard to what would be a useful system of health inspection?—I think there should be a district inspector appointed, and I think that he should be bound periodically to make returns of the state of every place in his district with reference to drainage and everything connected with sanitary matters.

3434. Do you think that the rural police might be made use of for those matters with advantage?—Of course they might be useful in representing things, but it would be much better to have an officer for the purpose.

3435. For small places might not they be useful?—I think only in reporting to an officer of a district. If the board of guardians had an inspector or surveyor, he would do very well.

3436. (*Mr. Hibbert.*) Have you paid off any portion of the loan that you have contracted?—I think not. In the accounts of the committee, as they appear in their ledger and banking book, there is nothing showing what they have received and expended since September 1868, so that I do not know the exact state of things, but as far as I can make out they have only paid the interest due to the man from whom they borrowed money; I do not think they have paid off any portion of the loan.

3437. Do you know whether any rate has been gathered in the nature of a sewer rate?—Under the Sanitary Act they have raised, by precepts, 500*l.* to meet, I suppose, working expenses and the payment of principal and interest. The rate or account of water supply is a separate rate from the poor rate, but it is levied in the same way.

3438. But still that rate would have to be approved by the justices, would it not?—Yes; but justices have told us that if the rate appears to them to be properly prepared, the affixing their signatures to the rate book is simply a ministerial act; they are obliged to grant the rate.

3439. Do not the overseers collect the rate?—They do, that is to say, through their assistant overseer.

3440. Would not there be a chance of looking into the way in which the money has been expended when you come to audit the overseers' accounts?—The auditor of our district disputes the right of the overseers to lay those accounts before him. He does not refuse to audit, but he thinks he is not obliged to audit them.

3441. When you have your yearly meetings to appoint an overseer, would not he lay before you the expenditure for those purposes?—The overseers would only show what moneys they had received and what moneys they had given to the sewer authority, that is all they would do; they would not give any details; they would not show the particular purposes to which the money has been applied.

3442. The overseer merely hands over a certain sum to the sewer authority?—That is all.

3443. Would you approve of a system which would give power to elect a local board or governing body each year, putting the magistrates residing in the district upon that board *ex officio*?—I must candidly confess that I think the magistrates of the district would be found not very useful as members of such a board. The overseers of Stow have been, I think, two or three times before the magistrates for advice, but the magistrates have never given any advice.

3444. Would not it be better to have one body who should undertake the management of sanitary matters and the management of the roads than to have them as now in the hands of two different parties?—There are way wardens.

3445. Are you under the Highway Act?—Yes, we have a highway district.

3446. You say that you think you should be placed more directly under the Secretary of State. Would you approve of a suggestion made by a gentleman who gave evidence here the other day, in which he recommends that the most complete power should be given to the Secretary of State to enforce upon the local authorities, or the magistrate's compliance with any order that he might make?—I think it would be a very good suggestion.

3447. That is to say the Secretary of State would make an order upon a parish for the carrying out of certain sanitary works, and if those works are not carried out then that the magistrates should have power to impose penalty upon the local authority as long as they fail to do their duty?—Yes, I think that is a very good suggestion indeed.

3448. (*Earl of Ducie.*) Can you tell us what is the exact social position or calling of the members of this committee of the vestry?—Yes; one is a grocer, one a dissenting minister, another a farmer, another a draper, another a baker, another a carpenter, another a butcher, another a mason, and another a coach builder. All are Dissenters but the draper; he often attends dissenting places of worship.

3449. Can you give us the calling and position of the six who retired?—The six who retired were myself, a solicitor, two grocers, and a gentleman of independent property, all members of the Church of England.

3450. If you had been formed into a district under the Local Government Act, could you in that district have found a sufficient number of persons who would have been sufficiently intelligent to carry out sanitary matters?—Yes, I think we could.

3451. Persons for instance in what profession?—All those gentlemen that I have mentioned would have been no doubt on the board, that is to say, they might have been if they had been elected, and under the Local Government Act the board is elective. There would be great difficulty probably in getting the best men elected, but they would have been willing to give their services. The only question is whether in a parish like Stow the best men would have been elected.

3452. Are we to look upon this committee of the vestry as the cream of the vestry?—No, very much otherwise.

3453. Why were they appointed?—They had a meeting prior to the first meeting of the vestry called under the Sanitary Act, at which they arranged who were to be members of this committee; they came with all the names to be proposed upon paper, and they laid them before me as chairman, and it would have been very invidious for me to have objected to any person nominated, so I at once suggested that those who were nominated should be elected; my own name and the names of the other gentlemen that I have mentioned as having resigned being on the list.

3454. What was the total number upon the vestry?—I should think there were 30 or 40 persons or even more present on that day.

3455. You told us that the committee of the vestry had reported only three times, and you gave us an account of one report especially to point out that they had omitted to make any mention of the purchase of the plant of that water company?—I find, on a reference to the vestry book, there have been five reports. In the two first they omitted to mention the purchase of the pipes and the taking of a lease of Mr. Pole.

3456. You have told us nothing about the other reports; is there anything worth noticing in those reports?—Yes; in the third report they attempted to explain away their conduct with reference to the purchase of those pipes. The fourth is a very short report indeed; I do not think there is anything particular in it. The fifth report is in print; it is appended to a statement of accounts, in which statement not a single date is annexed to any item either of receipt or expenditure.

3457. When did they make their last report?—It was made in August 1868.

3458. (*Chairman.*) Is there anything else that you wish to suggest to the Commission?—There is one thing which I should like particularly to mention. It appears that under the sanitary laws a sewer authority has power to take a pipe or drain through consecrated ground; I have suffered very seriously from this exercise of power at Stow. Without giving me any notice of their intention so to do, the committee laid a pipe and fire-plug in a footpath over the consecrated ground forming part of the ancient churchyard of Stow. The waterworks would have been equally complete without such an encroachment. Thinking that they had no power to do such an act as that, I caused the pipe and fire-plug to be dug up and removed. For so doing I was summoned by the clerk of the committee of the vestry before the magistrates, and the magistrates ruled that as, in their opinion, the footpath in the churchyard of Stow was a street within the meaning of the Acts, the committee had a perfect right to put a pipe there. My lawyers told me that inquiry satisfied them that the Legislature never contemplated such a desecration of a churchyard as the moving of soil for the laying of conduits or the taking a barrel drain right through graves or vaults in the churchyard, and they thought that I should be quite sure of getting redress by an application to the Court of Queen's Bench. So I did make an application, but the Court pronounced the magistrates justified in giving an opinion on the meaning of the word "street." Whether this opinion was right or wrong, the judges did not pretend to express an opinion upon, but they decided that the magistrates had not exceeded their duty in expressing the opinion they did, and from that opinion there was no appeal.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 17th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.P., F.R.S.
Lieut.-Col. EWART, C.B., R.E.
JOHN TOMLINSON HIBBERT, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

S. Alleyne, Esq.
17 June 1869.

(21.) SYDNEY ALLEYNE, Esq., examined.

3459. (*Chairman.*) You are vestry clerk at Tunbridge, are you not?—I act as vestry clerk.

3460. Are you a solicitor at Tunbridge?—Yes.

3461. Is Tunbridge parish under the Local Government Act?—It is not.

3462. What Act is its local government under?—Under no Local Act.

3463. Under what Act do you conduct the sanitary government of the place?—The vestry is the sewer authority, in consequence of the Local Government Act not being in operation in Tunbridge, or there not being any special Local Act; of course under the Sewage Utilization Act the vestry is the authority for carrying out the provisions of the Act.

3464. Is there no other authority than the vestry?—No.

3465. What public Acts give any power to the vestry for local sanitary purposes?—The Sewage Utilization Act of 1865, as amended by the Sanitary Act of 1866, gives the power.

3466. Is there no other public Act?—I believe there is what is called the Local Government Act.

3467. Is there no other Act which gives them any power for those purposes?—No, any powers would be of course derived from the general Acts, the Public Health Act, or the Local Government Act; but they have no special Local Government Act giving them any special authority or power.

3468. What power do the vestry have under the Acts of 1848 and 1858?—We have no power at all under those Acts; we have not adopted either of those Acts.

3469. Have the vestry as the sewer authority taken any steps for the improvement of the drainage of the town?—Yes, in October 1866 they appointed a committee to carry out the provisions of the Sewage Utilization Act of 1865, as amended by the Sanitary Act of 1866, to whom they delegated all their powers as the sewer authority.

3470. Under which section of the Act did they delegate them to the committee?—It was under the fourth section of the Sewage Utilization Act of 1865; there is full power under that Act to do so.

3471. How is that committee constituted?—I think the numbers are from eight to ten, comprising some of the gentlemen of the place, some of the principal farmers, and some of the tradesmen, so as to represent as much as might be all classes. The Reverend Dr. Weldon, the head master of Tunbridge School, was upon the committee.

3472. Are they elected in open vestry?—Yes.

3473. Is there any qualification?—No.

3474. The ratepayers might elect anybody that they chose?—I think so.

3475. Have they elected rather the upper class?—I think it was as fairly constituted as could be; it was a fair proportion of all classes down to the smaller ratepayers.

3476. What is the population of Tunbridge?—The population of the town itself in the census of 1861 was 7,147, and of the whole parish 20,101.

3477. Does that include Tunbridge Wells?—A part of Tunbridge Wells. Tunbridge Wells is in two or three parishes.

3478. What is the acreage of Tunbridge over which the vestry have authority?—The whole parish is 15,476 acres.

3479. Do you know how many acres the town of Tunbridge stands on?—About 550 acres.

3480. Can you tell us the rateable value of the whole parish?—47,000*l.*

3481. Can you state what the maximum local rates have amounted to in the pound?—From 3*s.* 6*d.* to 4*s.* in the pound.

3482. Can you also tell us the rate of mortality in Tunbridge?—I am unable to ascertain this.

3483. What proceedings were taken by the committee which you have described?—They employed local surveyors at first, Messrs. Charlton and Skinner, to examine the drainage and sewage of the town and to prepare plans for improving the drainage and sewerage.

3484. In what year was that?—It was at the end of the year 1866, soon after the committee was appointed; the committee was appointed in October 1866, and it was immediately afterwards.

3485. How far was this order carried out?—They reported that in consequence of the want of sufficient fall they could not suggest any scheme that they thought would effectually drain the town.

3486. What happened upon that?—In consequence of that Mr. Jones, of Ealing, having been recommended to us as having been very successful in two or three towns as to drainage, the committee communicated with him, and he came to Tunbridge and examined the whole town, and reported that he could devise a scheme by which it might be in his opinion most effectually drained, and he was thereupon directed to prepare plans with estimates, which he did and laid them before the committee. He attended and explained his plans, and from his information and elucidation of them we (I being upon the committee) considered that they were practicable and would carry out the desired object. However, as the estimate was very large, as his estimate for the drainage of the whole town was 6,000*l.*, and for the lower part of the town, which most needed it, 4,600*l.*, we as the committee did not like to take upon ourselves the responsibility of incurring so large an outlay without Mr. Jones's opinion being confirmed by some experienced and competent engineer or surveyor. We then suggested this to Mr. Jones, not intimating that we had any mistrust as to the practicability of his scheme, but we said that it would be satisfactory if his views were confirmed by some other engineer, to which he readily assented, and his plans and scheme were submitted to Mr. Rawlinson, the Government surveyor, I believe, and he reported that they were not only practicable, but he thought most efficient, and would answer the object in view. Mr. Rawlinson having confirmed the practicability of Mr. Jones's plans, Mr. Jones then was directed to do what was necessary to carry out the scheme. I do not find that there was any minute to that effect, but there was a general intimation that they would be adopted, and I believe he put himself in communication with the Home Office, submitted his plans there, and obtained their sanction to borrowing powers for carry out his scheme. At that stage of the proceedings some of the ratepayers being dissatisfied, particularly with the large outlay

that this scheme involved, expressed much dissatisfaction, and a vestry was called to consider the subject, which was held on the 12th of December 1867, a little more than a year after the first committee was appointed. The terms of the notice of that meeting were to consider the propriety of dissolving the committee, and at the meeting it was moved by Mr. Buley and seconded by Mr. Johnson that the committee be dissolved and another committee appointed. An amendment was moved by Mr. Gorham, a solicitor at Tunbridge, and seconded by Mr. Izard, that the existing committee be requested to continue in office with such additions as the vestry may determine. The amendment was put to the meeting and lost, and a poll was then demanded on the part of the movers of the amendment, but it was considered that there was some informality in the proceedings of the poll, and therefore the matter dropped, and nothing further was done with regard to the poll, and some few weeks after that the committee themselves resigned.

3487. What power under the Act of 1865 have the vestry to dissolve the committee which they had formed?—There is power under the 4th Section of the Sewage Utilization Act of 1866, which says, "a "sewer authority may from time to time add to or "diminish the number of the members, or otherwise "alter the constitution of any committee formed "by it, or dissolve any committee." In consequence of dissatisfaction expressed by some ratepayers the committee resigned voluntarily. Then on the 17th of July 1868 a vestry was called to consider the propriety of removing several dangerous and obnoxious accumulations from the public sewers, and to adopt such steps as might be desirable. At that meeting a committee was appointed to remove some of the nuisances, and to examine others complained of, and the drainage of the parish generally, and to report to a future vestry.

3488. Was the committee formed merely for one special object?—Yes, with limited powers merely to examine those particular nuisances complained of, and to report upon the drainage. Then there were two or three subsequent vestry meetings, when the committee made their report as to those particular cases, and they had authority, with reference to them, to deal with them and remove them; but that committee never had the full powers of the vestry like the first one, but their functions were limited to the specific objects brought before them, and the particular nuisances enumerated at the meeting.

3489. What has been the result?—That committee is still in existence, doing some little works with regard to the drainage; they have had plans prepared by some local surveyors, and the present position of things is this, that we have now some three or four or five plans, which have been brought before different vestry meetings, one plan being recommended by some persons and others by other persons, so that at last the vestry came to a resolution to communicate with the Home Office upon the subject, to request that they would send down some competent person to examine the different plans, so as to guide the vestry which to adopt and the course they had better pursue.

3490. Did I rightly understand you to say that the first committee with general power as the sewer authority were dissolved after sanction had been given by the Secretary of State to the works that they proposed?—They were not dissolved, they resigned. I was not aware until the last few days that any sanction had been given, but it appears, as I mentioned just now, that Mr. Jones put himself in communication with the Home Office, and I suppose he considered that he had authority to apply to them for their sanction, but the committee of which I was a member myself never expressly authorized him specifically to apply for that power.

3491. I want to know whether the Local Government Act Office, which is part of the Secretary of State's department, gave any actual sanction?—I understand that they did, but I cannot speak of my own knowledge.

3492. Can you state whether the sanction was merely to the works and plans and estimates, or did it go still further, to give the power of borrowing for the purpose?—From the information which I received it was sanctioning the power of borrowing to carry out this scheme.

3493. Are the Commission to understand then, upon the whole, that the sanction of the Local Government Act Office, was given to Mr. Jones's estimate, and even extended to authorize your borrowing money for the purpose of those works without the authority of the committee?—There was an intimation given to Mr. Jones that, if his plans were confirmed by some competent person, they would no doubt be adopted, and if the committee had continued we should certainly have adopted them and carried them out, and I suppose that, from this position of things, Mr. Jones considered himself authorized to make the communication that he did to the Home Office. I have since been informed that he had authority to make all necessary arrangements.

3494. What is the state of the drainage now at Tunbridge?—It is very bad, particularly in the lower part of the town.

3495. Is there a water company at Tunbridge?—Yes.

3496. Is there a good supply of water?—Only sufficient for the houses, but none for the streets, and certainly not for the purpose of drainage and sewage.

3497. What is your opinion as to the vestry being a satisfactory machinery for administering sanitary laws?—I think it most unsatisfactory.

3498. In what way?—Inasmuch as it gives some small ratepayers, who may consider the expense perhaps more than any sanitary objects, the opportunity of coming in large bodies and outvoting the more respectable inhabitants, who consider the matter more fully and are prepared to advise that which is best for the town. That has been peculiarly our case at Tunbridge. The persons who took proceedings to get rid of the first committee comprise generally the smaller ratepayers, and hence they outvoted the larger ratepayers.

3499. Do you think that in a vestry there is a great number who have votes who are not likely to take a large view as to the necessity of public works which may cost them money?—Yes; there are two parties who object; in the first place many little ratepayers, who only consider the expense, not taking a comprehensive view of the matter; and the farmers who object to contribute to what they consider the benefit of the town, without a commensurate benefit to themselves, as living out of the town. So that those small ratepayers living in and contiguous to the town, assisted by the farmers, who have their six votes, can outvote the other large ratepayers if they choose to do so, particularly as at the vestry you find that many of the respectable inhabitants do not come; they leave it to those who like to attend, and who have got an object to carry.

3500. Have you any inspector of nuisances at Tunbridge?—Yes, one.

3501. What is his duty?—He is appointed by the guardians to inspect the nuisances, and to report to the magistrates or to the guardians.

3502. Is the parish of Tunbridge a union for poor law purposes?—Tunbridge parish is comprised in the union called the Tunbridge Union, comprising 10 parishes.

3503. Then the inspector of nuisances is appointed by the guardians of the whole union?—Yes.

3504. And there is only one?—Only one for the town.

3505. Has he any other office besides inspector of nuisances?—He has been lately appointed inspector of lodging houses, as being connected with that duty; he has no other office but that, that I know of.

3506. Has he an assistant inspector officially appointed?—No one officially appointed.

3507. He does the whole work?—Yes, or if he has an assistant he pays him himself; there is no recognized assistant.

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3508. Can you tell us what his salary is?—20*l.*

3509. From the smallness of his salary, I presume that he is a man who is otherwise employed?—Yes; he is a small tailor in Tunbridge.

3510. What amount of time does he give up to inspect the nuisances of those 10 parishes, or in what way is the existence of nuisances in any part of this union brought to his knowledge?—He is only inspector of nuisances for Tunbridge town; not for the other parishes in the union. He is appointed by the union.

3511. Have you other inspecters of nuisances besides the one for the town?—Yes, in the different parishes; I believe the guardians appoint inspectors for some of the parishes.

3512. Is it possible that this tailor at Tunbridge, paid that small salary, can really effectively inspect the nuisances of the town?—He is an active and an intelligent man; he has very little or no business, so that he has plenty of time to do the inspection if he likes.

3513. Practically, should you say that the nuisances are removed, or are these nuisances to your knowledge left unremoved?—Some have been removed, but the principal ones, arising from bad drainage and sewage, remain yet to be removed.

3514. I think you mentioned a lower part of the town; how is that as to nuisances?—The state of things is very bad in the lower part, the drainage particularly.

3515. Does disease hang about those low places which are badly drained?—Yes, there is low fever at times in that part of the town.

3516. Have you formed any opinion yourself as to what would be the best kind of local authority to carry out local government purposes in Tunbridge?—I think it would be most desirable for Tunbridge to adopt the Local Government Act, inasmuch as it is necessary to have compulsory powers from the difficulty of carrying any remedial measures owing to the opposition that we have of late years received from those who, as I said before, look only perhaps to the expense, irrespective of the general interests of the place.

3517. Is there any chance of the Local Government Act being adopted in Tunbridge?—I think so; the great majority of the larger ratepayers, and the more respectable inhabitants, are most anxious to adopt it.

3518. What is the first step that is required to be taken in adopting that Act?—Speaking from recollection, a certain number of ratepayers must memorialize the Home Office.

3519. Do you think it possible that such a step may be taken in Tunbridge?—I think it is probable; all the more influential inhabitants are most anxious for it.

3520. Would you suggest the adoption of the Act being facilitated by law in any way, so that if there is any reluctance to adopt it, it might be made more easy?—We must of course follow the mode prescribed by the Act in taking the initiative.

3521. Can you suggest any alteration in the Act which would make it more easily adopted?—Unless it were that the Home Office or the Secretary of State should have discretionary powers of enforcing it upon his own information and knowledge where the population of any town amounts to a certain number. I think it requires a majority of the owners and ratepayers now to set the Act in motion. I have mentioned that at the last vestry a resolution was passed that a communication should be made to the Home Office, requesting them to send down some competent person to examine those different plans. And when the resolution was passed, I, acting as vestry clerk, suggested that the communication had better come from myself as the official organ of the vestry, but that was negatived by the friends of the present committee, they preferring that the communication should come from the existing committee. The communication, I am informed, has been made by the committee to the Home Office, and one of the members of the committee has personally attended at the Home Office and had an interview with the authorities there. The result of it is, as I am informed, that they have declined at present to send anyone down, but requiring them to send up their plans for examination, and I am told that a deputation to-day has gone to the Home Office, with plans for the purpose of being examined.

3522. (*Earl of Romney.*) Is the committee now composed of a different class of persons to those who were first appointed, and who retired?—Yes, very different.

3523. What are they now?—They are generally speaking, small tradesmen or small farmers comprising the smaller ratepayers.

3524. Are they the same class of persons who before effectually resisted the carrying out of the plan?—The first committee comprised all classes, but the present committee are almost all the smaller ratepayers.

3525. Are they the class of persons who had before opposed the scheme which the former committee had suggested by the advice of Mr. Jones?—Almost exclusively so.

3526. You said that the first persons who were consulted by the former committee gave no plans, because they found the works of the drainage so difficult?—They were mere surveyors; Mr. Charlton is a large land agent and surveyor; they were not very conversant with engineering, and therefore they had not really sufficient experience to deal with a complicated plan; hence we went to a more experienced engineer.

3527. What was Mr. Jones's plan of drainage; where did he discharge the sewerage?—His plan was to carry it below the river some distance from the town, and to fix it by irrigation; not to discharge it into the river, but beyond the river.

3528. Do you mean going down the river so far as to get sufficient fall?—Yes.

3529. How far down the river would that be?—I should say it would be half a mile or a mile from the river.

3530. How far, following the direction of the river; it would probably take the same low land?—Yes, but the place specially where the irrigation would take place would be half a mile from the bed of the river.

3531. Is that land subject to floods?—Yes, very much so.

3532. The river there is dammed up by locks, is it not?—Yes.

3533. Do you know how high the water is at Tunbridge above what its natural level would be if there were no locks?—I am not prepared to say, but those matters were well considered by Mr. Jones. His plans were very much criticised by the committee and examined, and he said that he saw no insuperable difficulties. In fact he felt quite confident that his plan could be carried out, and Mr. Rawlinson confirmed it.

3534. You said that you thought it was very probable that Tunbridge would be willing to adopt the Local Government Act?—Yes, I am certain that the great majority, all the more respectable influential inhabitants and the principal ratepayers, would be willing to adopt it.

3535. Is there not a fear that the same persons who before effectually resisted the scheme that was proposed, namely, the small ratepayers and the farmers, would have power now by joining together to obstruct your getting the Local Government Act, the same as they before obstructed your carrying out the scheme?—I think that if an attempt was made to adopt the Local Government Act we should then get the majority of the principal ratepayers to come forward and support it. The smaller ratepayers have hitherto succeeded, from an apathy on the part of the others not attending the meetings, and thus giving them an opportunity of outvoting us and carrying their own measures.

3536. When you gave an account of the popula-

tion and the acreage did it include the Tunbridge Wells portion of the parish?—When I gave the entire population 21,000, it comprised that part of Tunbridge Wells which is in Tunbridge parish.

3537. Tunbridge Wells has a Local Act of its own, has it not?—Yes.

3538. (*Mr. Powell.*) You mentioned some plans which you said had been laid before the vestry since the abandonment, for a time at least, of Mr. Jones's plan. Could you very roughly state on what scale those plans are?—I am told that the scheme which is favoured by the present committee would cost about 3,600*l.*

3539. And it would be extremely partial in its character?—We consider so; at least, we do not take upon ourselves the responsibility of offering an opinion, but we wish some competent authority like the Home Office to decide upon those different plans.

3540. Does that deficiency arise from the small size of the drains or the inferior character of their construction, or does it arise from the fact that the works on this proposed plan only affect a small portion of the town?—The present scheme proposed would be less extensive in area than Mr. Jones's plan.

3541. And the works altogether would be of an inferior class?—They would be less extensive; they only take perhaps a certain part of the town, and they consider that some of the existing drains might be retained, so as only to have new drains, or to adopt their works in certain parts of the town. It is not so comprehensive a scheme as Mr. Jones's.

3542. So far as it goes in point of area, is it the case that it is not very inferior to what Mr. Jones recommended?—I should say that it was, because I think it only takes certain parts of the town, and is not so comprehensive in its general scope as the other.

3543. The result of your answers then would be this, that supposing that the plans now in the mind of the vestry were carried out, their existence would interfere with the eventual carrying out of a comprehensive scheme?—The plans now proposed to be laid before the Home Office comprise Mr. Jones's. Mr. Jones's is one of three or four plans now proposed to be submitted.

3544. You spoke about some public sewers, what sewers did you refer to?—We have a main sewer through the town made years ago.

3545. Do you know how it came into existence?—It was made I think partly if not entirely by private subscriptions.

3546. You say that you desire the adoption of the Local Government Act in consequence of the different character of the constituency; are there any other reasons which press upon your mind?—I think that powers are given by the Local Government Act which the vestry do not at present possess.

3547. Do you think that the low fever which you have mentioned has at all arisen from the flooding of the lower part of the town?—Not so much from floodings as from the very bad drainage of the lower part of the town. The stagnant water is very offensive.

3548. Has any effort ever been made to remedy those floodings of the river?—Very partially.

3549. (*Mr. Bircham.*) Have you had occasion to consider in whom the previously existing sewers of the parish are vested legally?—We have to some extent, but we have not anticipated any objection by any proprietors or any owners of property.

3550. Do you know out of what rate they were paid for?—The main drain made through the centre of the main street of the town, a very good drain, was made a good many years ago, and I think, from recollection, that that was done principally by subscription, if not entirely so. I know that it cost some 1,200*l.* or 1,400*l.*

3551. Has it occurred to you as desirable that the power to make sewers should be in the same authority that has control over the highways?—I have not considered that point, but I think that such important duties as those are better intrusted to persons whose time and attention would be more specifically given to them than to general parochial matters.

3552. What is the present jurisdiction over the highways in Tunbridge?—We have a local Highway Board under the Highway Act.

3553. Is it conterminous with the Poor Law Union?—No. The highway board is only for Tunbridge parish, the union comprising 10 parishes.

3554. (*Lt.-Col. Ewart.*) Have you a regular system of water supply at present at Tunbridge?—We have a water company supplying the houses.

3555. Is that water company under a special Act of Parliament?—The water company is under a deed of copartnership.

3556. Where do they get their supply from?—From the River Medway.

3557. Is the intake above the town or below it?—Their reservoir is above the town; the river runs intersecting the town, and we have a reservoir upon the west side of it.

3558. Does the river receive any pollution from sewage above the town of Tunbridge?—The sewerage runs into the river, and that is one of the great reasons why we want a new system of drainage; that is one of the most serious objections to the present system.

3559. I mean above the intake of the water for the town, is there any sewerage pollution that you are aware of?—I believe there is no sewerage pollution above the intake of the water.

3560. Are you aware whether the town of Tunbridge Wells, who are under the Local Government Act, are going to obtain a water supply from the South-eastern Railway near Sevenoaks?—I have merely heard it rumoured, but I have never had any direct information as to that.

3561. Would not the supply in that case pass close to the town of Tunbridge?—It must do so.

3562. Then if you were under the Local Government Act you would have the same facility for obtaining water in that way as Tunbridge Wells, would you not?—Tunbridge Wells have their own special Local Act, but if we were under the Local Government Act it would give us that power.

3563. You would be able to make a similar arrangement to obtain a good supply of water without taking it from the river?—Yes; that is one of the different schemes which have been suggested. Amongst the different schemes for drainage that has been propounded by one person recommending that course.

3564. (*Mr. Hibbert.*) You stated that the population of the parish of Tunbridge is 20,000, and of the town 7,000; for what district was it that the committee was appointed by the vestry; was it for the parish or for the town?—For the town.

3565. What had been the local government of the town previous to the passing of the Sanitary Act, or was there any local government at all?—None whatever.

3566. Were they under the surveyors of highways and the overseers?—Yes.

3567. Before the passing of that Act they really had no power to make sewers?—None whatever.

3568. And that arrangement for the sewer which you have mentioned was made by private subscription?—Yes; quite so.

3569. If the committee were to act for the town, is the town a separate township?—No; there are hamlets in connexion with it; Hildenborough, South Borough, and others.

3570. How have they power to separate a portion of the parish?—Under the Sewage Utilization Act there is power to have what is called a special drainage district, and hence in our parish one of the large districts, South Borough, is a special drainage district.

3571. Does this part of the town include any land which is not occupied by building?—Yes; because

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the vestry is at present the sewer authority for the whole of the parish that is not comprised in Tunbridge Wells or in any special district, and there is no part of the parish that has its special district except South Borough; Hildenborough and the other parts are still left under the authority of the Tunbridge parish vestry.

3572. You stated that the farmers objected to any outlay on account of the fear of the rates being increased; is it not a fact that the farmers would only be liable to a rate of one fourth upon farming land?—That would be so, but notwithstanding that they still objected.

3573. Is it not the case that even, although you have your committee appointed, you have at the present time actually three different authorities in operation in the town of Tunbridge; you have your committee, the sewer authority, you have the guardians who are acting under the Nuisances Removal Act, and you have the board of surveyors who are acting under the Highway Act?—Quite so.

3574. Is it your opinion that it would be better to have all those authorities centred in one board?—No doubt it would be better.

3575. Is your highway board which you have mentioned a board of surveyors under the old Highway Act of William IV., or is it under the late Act a part of the highway district?—Under the old Act of William IV.

3576. Does it give you any advantages having a highway board of that nature over merely having surveyors of highways appointed in the usual way? No; on the contrary, it is acting very unfavourably and disadvantageously, being comprised very much of the same class of persons as the present sewer committee of the vestry. That is one of the reasons why I recommend the adoption of the Local Government Act, inasmuch as all those different authorities might be consolidated, and there might be some concurrent and uniform system for the general working of the whole, instead of being subject to the particular opinion of one board here and another elsewhere, which acts very badly, I think.

3577. Is it your opinion that in towns of a certain population the Local Government Act should be compulsorily applied in every instance?—As far as I am able to judge I should say so, inasmuch as it tends to ensure uniformity and a better system of operations than you can expect from constantly changing boards and from mere local boards.

3578. (*Earl of Romney.*) The highways are administered under the Local Act in Tunbridge, are they not?—No, it is under the General Highway Act. There is power where the parish likes to appoint a board to carry out the old Highway Act. The new Act is in operation in all the union except Tunbridge town.

3579. (*Chairman.*) Do the guardians of Tunbridge happen to be elected upon that committee of the sewer authority?—I do not think that there is one guardian upon that committee.

The witness withdrew.

The Rev. W. H. M. Buck.

(22.) The Rev. WILLIAM H. M. BUCK examined.

3580. (*Chairman.*) I understand that you are the vicar of the parish of Sutton-cum-Seaford in the county of Sussex?—Yes.

3581. Is Seaford a borough?—Yes; it is denominated the borough and town of Seaford.

3582. When was it incorporated?—In the time of Henry VIII.; it is an ancient borough; it had been denominated a limb of Hastings; subsequently it was incorporated as a port; it has an old chartered corporation.

3583. What is the area of the whole parish?—About 2,250 acres.

3584. What part of that is within the borough?—I believe the whole parish is considered a borough. The parish and the borough are co-extensive or identical.

3585. What is the population?—About 1,150.

3586. What is the rateable or assessable value?—According to the new assessment recently levied, about 6,675*l.*

3587. Can you give us the highest amount that the local rates have ever amounted to in the 1*l.* within the last 10 years?—6*s.* The poor rates alone average about 2*s.* 8*d.*, and they have been as high as 3*s.* 9*d.* in one year.

3588. Does that poor rate of 2*s.* 8*d.* in the 1*l.* include the borough rate?—All matters with regard to Seaford are of a very peculiar nature; the borough rate is embodied in an item denominated "county rate," the accounts of the parish are sent to the clerk of the union signed by two justices or jurats. The jurats by right of their office may be appointed justices of the peace for the borough. For the half year ending September 1867 the item "county rate" was 35*l.*, whereas for the half year ending March 1868 it amounted to 187*l.* I applied to the clerk of the union for information as to the cause of this heavy charge, and his answer was, that Seaford is the only parish included in the union of Eastbourne, from which he never receives an account of expenditure; he merely receives an order signed by two justices to pay a certain amount, which is accordingly paid; but that from every other parish in the union he receives a yearly balanced account from the justices, setting forth all items of expenditure. The two justices who signed that order for 187*l.* are jurats, members of the corporation.

3589. Of what classes of persons does this population of 1,100 chiefly consist?—A few of them are tenant farmers, and there are some shopkeepers, fishermen, and agricultural labourers; we have only two families who may strictly be denominated gentry, and those two are branches of one and the same family.

3590. What are the local authorities for sanitary purposes in Seaford?—The local authority is the vestry, and its authority has been delegated to a sewer committee appointed by the vestry, consisting of 12 ratepayers.

3591. What is the governing body of your borough?—The corporation.

3592. Have they not sanitary powers and duties imposed upon them?—That question arose, and the recorder was consulted on the subject, and his opinion was that they were the sewer authority. The Home Office authorities, however, decided that the vestry was the proper authority and not the corporation.

3593. Might it not be the case that the vestry was the proper authority to carry out the Nuisance Removal Acts, but that the corporation were the proper body to carry out other local government purposes?—The corporation have authority under the "Nuisance Removal Act," and to hold quarter sessions for the trial of prisoners, but they seldom have any prisoners to try; it is generally a mere matter of form.

3594. The vestry would of course be the sewer authority under the Sanitary Act and Sewage Utilization Acts, but my question was, whether other local government purposes, such as carrying out drainage, water supply, sewage, would not devolve upon the corporation?—No.

3595. But you say that the question was raised?—Yes, the question was raised, and Mr. Wyatt, the recorder for the borough, was of opinion that the corporation had that power. The chief officer of the corporation is denominated the high bailiff, not the mayor. The inhabitants were incorporated under the style of the bayliff, jurats, and commonalty of the town, parish, and borough of Seaford; there is a high bailiff,

a recorder, a town clerk, two chamberlains, a sergeant-at-mace, and two constables.

3596. For any borough purposes through what body do they act?—They act principally through their justices. They hold quarterly assemblies, empannel juries, and try prisoners, but if the offence be of any magnitude they generally send the prisoner on to Lewes sessions; they do not deal with cases summarily, except they be those for which a month or two months' imprisonment may be awarded.

3597. Under what authority are your highways?—There are two overseers of highways appointed at the Easter vestry, and elected annually.

3598. Under what authority are your street arrangements or your markets?—We have no market.

3599. Supposing there was a question about the drainage of your streets, to whom would that question be referred?—To the sewer authority. The streets have been recently drained.

3600. And who is the sewer authority?—The committee appointed by the vestry.

3601. Have the corporation nothing in the nature of a town council?—No.

3602. How far has your sewer authority complied with the Sanitary Acts of 1866 and 1868?—The town has been drained, the surface drains have been greatly improved, the sub-drains have been laid down, and most of the privies and water-closets have been already connected with the main drain.

3603. How are the contents of the main drain disposed of?—The outfall is into the sea.

3604. Are the drains themselves well constructed and ventilated and flushed?—They have been constructed and ventilated in accordance with the plan laid down by the engineer, but I am not in a position to give an opinion upon that point; I have my own individual opinion, but that goes for nothing.

3605. Were those plans referred to the Local Government Act Office, or did they receive any sanction from the Secretary of State?—Yes, the sanction of the Secretary of State was obtained.

3606. What is your own private opinion of the works?—I think the works as carried out at present are calculated to answer all the purposes of the present population, but if it were to increase to any very great extent, as is anticipated, I think that they might be found to be somewhat insufficient.

3607. What has been the cost of the works?—About 2,800*l.*

3608. How was that money paid?—The money has been obtained by means of a loan, and is paid by the levying of a sewer rate.

3609. How was the loan obtained?—It was obtained from two individuals in the parish.

3610. How is it repaid?—It is repaid by levying a rate and by instalments extending over 30 years.

3611 I presume that that arrangement was sanctioned by the Secretary of State?—It was.

3612. Are the repayments made punctually and willingly?—Yes; the collector of the rate informs me that he has no difficulty in that respect.

3613. Was there any difficulty in inducing the owners of private houses to conne ct their drainage with the main drain?—There was some grumbling on the part of two or three persons, but they are now of opinion that it is for their advantage to have it done.

3614. What is your supply of water?—Our water is supplied from draw wells and pump wells.

3615. Is that sufficient for the wants of the town?—It is sufficient in quantity, but very impure in quality.

3616. Are you proposing to make a better water supply?—There has been no proposal as yet, but I think that the parish needs a water supply through pipes.

3617. What is the general condition of the dwellings of the poor?—In many instances they are in a very dilapidated state, and indeed I would say in some respects unfit for decent people to live in.

3618. Do you mean both as to their construction and as to their being crowded?—Not crowded, so much as to their being badly situated; for instance, many of the houses have two or three steps below the surface of the pathway, and the water pours both from the front and the rear into some of them; the out-offices, too, are not of a decent kind in many respects.

3619. What would be the authority which might deal with such a case as that of the improvement of the dwellings of the poor?—I do not think that the sewer authority has any power in that matter.

3620. Your belief is that, at present, there is no authority in Seaford to deal with the question of improving the dwellings of the poor?—I do not think there is.

3621. And those dwellings in your opinion are at this moment injurious to health?—Several of them are, and in appearance they are a disgrace to the town. Most of those that I refer to are the property of Lord Howard de Walden. That property is farmed out by his lordship's law agent to an individual who rents it on a repairing lease. Formerly Lord Howard de Walden used to have a bill sent in to him for repairs, without receiving any surplus income from the property; and I understand that he is now very glad to be exempt from paying the repairs.

3622. Do you know what sort of rental is paid for those very poor dwellings?—Exorbitant rents. They have been raised by this person who farms the property in some instances from 1*s.* 3*d.* to 2*s.* 9*d.*, and in some instances from 1*s.* 6*d.* to 3*s.* a week, if not more.

3623. Who repairs them?—The party who has the lease of them.

3624. Have you any inspector of nuisances?—We have.

3625. Have you more than one?—No.

3626. Is he a salaried officer?—He is a salaried officer of the sewer committee, and of the corporation as the "Nuisance removal" authority.

3627. Can you tell me what his salary is?—I am sorry to say it is only 20*l.* a year altogether; he has other occupations.

3628. What is his other occupation?—He is relieving officer of the parish under the guardians.

3629. Then he is appointed, is he not, by the guardians of the Eastbourne Union?—Yes; as relieving officer, but by the corporation as inspector of the parish of Seaford.

3630. That being the case are the nuisances at all efficiently inspected or reported?—I think they are. Still, he pointed out to me the fact that there is nothing about dungheaps or pigsties in the Sanitary Act of 1866, or in the Supplemental Act of 1868, which, although it gives additional power, yet makes no reference to those two descriptions of nuisances.

3631. Can you tell us what proceedings he takes in case of a nuisance?—He serves a notice upon the party to have the nuisance removed within a certain time, and if it is not done he can bring the case before two of the justices.

3632. Do you think that he is at all afraid of doing so, or where does his power fail?—'Tis the power of the sewer authority which fails, for want of a technical statement in the Act with reference to nuisances of that sort, and therefore he is obliged to refer such matters to the corporation.

3633. You do not think he is afraid of giving offence to the owners?—No, I do not. I think he does his duty conscientiously and firmly.

3634. Has it ever been proposed that the Local Government Act should be adopted in Seaford?—It has.

3635. Has it been objected to?—About three months ago it was objected to. Dr. Tyler Smith, who is the chairman of the sewer committee, and who is alternately high bailiff with Mr. James Singer Turner, a tenant of Lord Chichester's, sometimes for one and sometimes for two years each, proposed to the sewer committee that they should adopt the Local Government Act. A notice for convening a vestry

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for the purpose of considering that subject was duly posted, and the result was that there were only seven in favour of the adoption of the Act, and about 40 against it.

3636. Their fear was the expense, I suppose?—Their fear was not only the expense, but a general apprehension prevailed that their houses would be interfered with, and be regarded as obstructive, or being in the way of improving other persons' property. In fact they apprehended that too much power would be given into the hands of one or two individuals.

3637. Has the Secretary of State had on any occasion to interfere in Seaford, either upon the application of any inhabitant as to a nuisance, or in any other way?—He only interfered, to my knowledge, in the case of sending down Mr. Arnold Taylor to hold an inquiry in Seaford, and to report to him as to whether the town required drainage or not, and also as to whether the whole town or a portion of it should be the rateable boundary. Mr. Taylor recommended that the town should be drained, and that the boundary which had been marked out should be curtailed; those two recommendations have been already complied with.

3638. What has been done about the boundary of the special drainage district?—A boundary has been determined upon, and a large portion of land which had been included in the original boundary has been detached from it.

3639. What led to that inquiry?—An application from Mr. Daniel Morgan, of the firm of Morgan and Humphries, solicitors, Newgate Street.

3640. What was the nature of that application?—To request the Home Secretary to adopt compulsory measures for the drainage of Seaford.

3641. Was it an application, and not an appeal?—It was an application to the Secretary of State under the 49th section of the Act of 1866.

3642. Has there been any appeal to the Secretary of State against the proceedings of the sewage authority?—Not any that I am aware of. I think the proceedings so far give general satisfaction. After it had been determined, that the vestry and not the corporation constituted the sewer authority, time elapsed, and nothing was done, and Mr. Morgan being dissatisfied with that state of things applied to the Secretary of State under that section.

3643. (*Mr. Bircham.*) Did he apply that the Secretary of State should intervene under the 49th section of the Act of 1866?—Yes.

3644. (*Chairman.*) Has any appeal been made against the special district?—No; but the parish was polled to determine whether the whole or a part of it should be the rateable boundary, and there was a majority of three in favour of having only a part. I could have reversed that majority myself, but I thought it would be rather unfair towards the farmers, who had many acres of unprofitable land, to have them all included in the rateable boundary, so we abided by the majority in favour of only having a part.

3645. Was the committee that you described to us just now, the committee of this special drainage district, formed in consequence of that decision?—It was.

3646. Has that committee only limited power to deal with drainage and nothing else, or is it a general sewer authority?—It is a general sewer authority invested with all the powers of the Act of 1866 and the supplementary Act of 1868.

3647. Have they in fact done anything except the works which you have described?—They have taken up the surface drains, which consisted of boulders collected from the beach, and which were receptacles for soap suds and slops of all the houses, and which in hot weather emitted a very bad smell; the whole town in fact was in a dreadful state. I may add that all the filth of the place was emptied upon a common in front of the town, constituting a large cesspool, and when the wind was in a certain quarter, as it generally is for about eight months in the year, we derived all the benefit of a noxious effluvia arising from that place.

3648. Will you state to us generally, from your knowledge of the place, what local advantages you think would be consequent upon your having a good general sanitary authority?—Hitherto the principal drawbacks have been the want of drainage, and the infliction of such a corporation as we have. Seaford is considered the most salubrious locality on the south coast, the mortality is unusually low, and longevity prevails to a great extent there.

3649. But you stated that you wanted a better water supply?—Yes.

3650. Are you anxious for a good local board of health?—I am not anxious for a local board.

3651. Are you satisfied with the present state of things?—I am not, as regards the water supply for domestic purposes, but I think the present sewer authority has power to deal with that. I am told that the water is sufficient for flushing the sewers; we frequently have a very heavy rainfall, and the town itself, having a sloping surface, is flushed after rain to a considerable extent; besides, a great deal of water is now thrown into the pans of closets for flushing purposes, instead of being thrown into the streets as formerly.

3652. If the sewer authority had the power, and the thing ought to be done, why do not they do it?—I am not prepared to say that they do not intend to do it, but they think that the expense would be too great just now, at a time when we are trying to pay off the loan for the sewer works. I think in course of time it will be done.

3653. Do you know the rate of mortality at Seaford?—It is very small; it averages, I should say, about 14 in 1,100.

3654. Have there been any difficulties owing to the indefiniteness of the powers of the sewer authority, or any conflict between them and the corporation?—No. Owing to the clerk of the sewer authority being also the inspectior of nuisances, or, rather, owing to there not being a separate clerk for each of the authorities, there is no actual clashing; but, as regards the removal of nuisances, which I have adverted to, the fifth section of the Act of 1868 states that "a "sewer authority shall, within their district, have all "the powers vested in a local board by the 32nd "section of the Local Government Act, 1858, as "amended by any subsequent Act of Parliament, so "far as relates to (1) the removal of house refuse "from premises, (2) the cleansing of privies, ash-"pits, and cesspools." But it says nothing about dung-heaps or pigsties.

3655. There appears from your evidence to be, more or less, for some purposes, three authorities in Seaford; the corporation, the vestry, and the surveyors of highways. Has there ever been any difficulty found from the three not concurring in any particular objects?—The surveyors of highways have it in their power to determine whether a certain number of feet as frontage for the building of houses may be allowed or disallowed, according to the defined boundaries of the lands belonging to the corporation or other persons. The surveyors last year defined a boundary for an individual who is about to build. The corporation objected to that boundary, and are I am told likely to have a lawsuit about it. In that respect there may be some clashing.

3656. Is that the only instance that you know of any want of concurrence between those three authorities or any two of them?—I cannot boast much about concurrence; there is generally a good deal of disagreement on all matters, I am sorry to say, in Seaford. They agree to differ in fact upon local matters.

3657. Does not that agreement to differ end in public works not being executed which are desirable?—I cannot say that there has been any proposition for the promotion of public works other than the drainage, as yet.

3658. (*Earl of Ducie.*) Is this delegated committee

of the vestry selected on account of their intelligence or fitness for dealing with sanitary matters?—I do not think we have any reason to complain. They have selected very good men on the committee. One or two, perhaps, are not as well educated as one would desire, but still there is a preponderance of intelligence upon the committee.

3659. Is it probable that in Seaford, by the adoption of the Local Government Act, you will get a superior body?—I think not.

3660. (*Sir Thomas Watson.*) Can you account for the impurity of your water? You are on chalk, are you not?—Yes, we are.

3661. What kind of impurity is it that you complain of?—The impurity will be in some measure rectified by the drainage. Hitherto the cesspools have been in almost all instances in close proximity to the water wells, but the cesspool matter is now, of course, removed from that close contiguity.

3662. So that there is not that draining from the cesspools into the wells which previously existed?—No, not to the same extent.

3663. Then the water ought now to be pure?—No, I think not, from the analysis. (*Here the witness handed to the Chairman the Report of Seaford Water Analyses, made by Mr. Blyth, analytical chemist to the General Board of Health, and dated* 1857.)

3664. Is there not some stagnant water at Seaford, that is to say, water which washes over the beach occasionally when there are high tides, and remains stagnant and becomes offensive?—We very seldom have such high tides as wash over the beach. We had an inundation in January 1866, which flooded the lower part of the town to a depth of three feet.

3665. Did that leave behind it stagnant water?—Yes, it did, for some time, but it gradually subsided.

3666. Is there not also a percolation of sea-water through the beach?—Yes, sea-water frequently percolates through the beach, and becomes more or less stagnant, but it very soon disappears. The most offensive part was where the surface drains emptied their contents upon the beach; then the admixture of salt water with the town sewage became excessively offensive.

3667. Where do the drains terminate now?—The outfall is in to the sea.

3668. At some distance?—Not at any great distance from the beach, but it forms a declivity, so that the outfall at low neap tides is at a considerable depth. It is placed, I understand, at such a point as to meet an eddy which flows inwards, and immediately ebbs outwards, forming an undercurrent.

3669. The effect of which is to carry it to the sea?—Yes. I have been making inquiry as to whether there is any nuisance traceable as the result of that system, and the overseer informs me that as yet he has not found any deposit of sewage substance.

3670. (*Mr. Bircham.*) Have you found no inconvenience in finding the necessary machinery, such as a clerk to your committee, and incident to the committee generally, in Seaford, in a population of 1,100?—No; I think the clerk and the committee act very efficiently so far, and we have it in our power as a vestry, if we have reason to think that their labours are not being carried out according to our wishes, at once to convene a meeting, and to call upon them for an account of their proceedings.

3671. The clerk of the committee is also the clerk of the corporation?—He is inspector of nuisances under the corporation, and acts as clerk at vestry meetings, and is also relieving officer.

3671*a*. Do you think that in places of the size of Seaford generally it is desirable to have health objects carried out by the vestry?—I think so.

3672. You do not think it would be better that the poor law system should be carried out in districts of such a size, but not necessarily conterminous with them?—No; I think the plan at present adopted is a very efficient and inexpensive one.

3673. Have you had any opportunity beyond your own parish of seeing how the inspectors of nuisances do their duty?—Not in the country, but I have had experience in London.

3674. Is what you have spoken of with reference to the dwellings of the lower class in Seaford confined to Seaford, or do you see it in the adjoining parishes?—I think that some of the cottages in the adjoining parishes are better than those in Seaford. The latter are very old indeed, and many of the poor people suffer great discomfort for want of the ordinary conveniences and appendages which cottages ought to have, both internally and externally.

3675. Is it your opinion that there should be some jurisdiction for compelling proper conveniences in cottages, and that they should be constructed in the first instance and afterwards maintained in a condition suitable for human habitation?—That would be very desirable; but at the same time I think that if the landlords of such properties were appealed to from the right quarter they would manifest a disposition to improve them.

3676. You mentioned the Act of 1868; have you done anything under it with regard to earth closets or anything of that kind?—No; the closets are being connected by the drains with the main drain.

3676*a*. You are within a union for poor law purposes, are you not?—Yes.

3677. How are the highways managed in Seaford?—The highways are under the supervision of the highway surveyors, who are responsible for the repair of the roads. Hitherto the surveyors have generally been the contractors, a system which I, as a ratepayer, objected to, it being open to abuses and negligence for.

3678. Is the parish of Seaford isolated for highway purposes, or is it one of a district board for highway purposes?—It is not in union with other parishes. It was recently proposed that it should be placed in union with the district of Lewes, but that proposition has not be acceded to.

3679. Did I understand that the corporation of Seaford exercises any jurisdiction in matters of health at all?—No; I cannot say that it does.

3680. Nor in the correction of nuisances?—Only as a nuisance removal authority; but as regards any matter connected with health, such as the removal of a patient having an infectious disease, or any expense connected with medical attendance, those are all charged upon the poor rates.

3681. But does the corporation, as such, exercise any jurisdiction?—I do not think it does.

3682. The corporation is then the nuisance authority?—Yes; but we do not receive any local benefit whatever, that I am aware of, from the corporation, inasmuch as they do not expend their funds upon the town. They used to subscribe 10*l*. yearly to the national schools, but even that small sum was withdrawn two years ago.

3683. Neither have they jurisdiction in the management of the poor?—No; the poor are managed by the relieving officers under the poor law authorities.

3684. So that your local authorities are, for nuisance purposes, the board of guardians; for ordinary health purposes, the vestry; and for your highways, the surveyors?—Yes; and the corporation has power, to a certain extent, with regard to the removal of nuisances.

3685. (*Mr. Powell.*) Is the corporation in possession of any property?—It has possessed itself of property.

3686. But as a fact, is the corporation, rightly or wrongly, with a good or a bad title, in possession of property?—It is.

3687. Have you any notion of the annual value of that property?—The rental of the corporation, I believe, is about 45*l*., that is from sources which they have always derived it from; but latterly they have had an augmentation of 20*l*. a year, with an agreement to receive 1*l*. a year ground rent for every house that may be built upon the common land which they have possessed themselves of, under the impression, I have no doubt, that they have a right to it, but I believe that they are wrong in that view.

3688. Is it something in the nature of a manorial

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right?—They have leased all the common lands in front of the town, bounded by the houses on the one side and by the beach on the other; they have leased it to one of their own body, Dr. Tyler Smith, for a consideration of 500*l.*, which 500*l.* they have shared out amongst themselves, and put it into their own pockets, and also for a consideration of 20*l.* a year, some of the freemen disapproving of this arrangement, and regarding the 500*l.* as a bribe, have not claimed their portion of it.

3689. When you say that they share it out amongst themselves, is there no public purpose to which their income is devoted?—No; they pay two constables a small sum yearly, and they pay a poor old man, who has been about 45 years their servant as mace bearer, and who has charge of the town hall and its property, a yearly salary of 14*s.* He of course receives outdoor relief, so that the ratepayers are actually maintaining him. Their surplus income, whatever it may be, after defraying the annual expenses, is shared out, as they call it, on the 1st of May. On Michaelmas day they elect their high-bailiff.

3690. And that is done as a matter of notoriety; it is not done in secret?—It is known that that is done.

3691. There is no secret made of the arrangement?—No. All that information was elicited by Mr. Arnold Taylor, and he has a note of it all.

3692. As I understand you, the corporation do not proceed under any Local Act, but under some ancient charter?—Yes, under some charter.

3693. Then their rights are no doubt more or less vague, being based on tradition rather than on written documents?—My own opinion is, having read the charter, that the common lands were given to the poor inhabitants of the parish, and the freemen were appointed to be trustees of this property for the benefit of the poor.

3694. Is the land in your neighbourhood chiefly in the possession of one or two great proprietors?—Lord Chichester, who is the lay impropriator of the great tithes, has a considerable portion of it.

3695. Is there no land which persons disposed to invest their capital in the building of houses might acquire, and so increase the accommodation?—Certainly there is; such land is to be had at present.

3696. How do you account for the fact that although those high rents of houses prevail a supply to meet the want is not immediately produced?—Because the farmers, as a rule, do not supply their workmen with cottages, and the poor agricultural labourers are obliged to seek any refuge they can possibly obtain.

3697. Are there no small capitalists in your district who might be tempted into such a speculation as building houses?—There are; recently a proprietor of land has commenced building a row of cottages suitable for labourers.

3698. But still this scarcely arises from an indisposition to build, rather than from the fact that all the land is locked up?—The land is not locked up; there are plots of land which will very soon be sold by auction, and I believe that one of the landed proprietors, Mr. Purcell Fitzgerald, is disposed to let a considerable portion of his land, and I rather think Lord Chichester also, in course of time, if the land should be required for building purposes.

3699. Should you, as being interested in the welfare of the people, think it desirable to extend to such a place as Seaford the provisions of the Artizans and Labouring Classes' Dwellings Act, 1868, the leading feature of which Act is this, that when any premises are in a state dangerous to health, so as to be unfit for human habitation, after certain proceedings taken, the local authority may compel the owner to execute certain repairs, or, in his default, may either execute them themselves, or may close the dwelling; should you consider that to be a provision which would be beneficial to your parish?—Yes, as to some houses in it, it would.

3700. And you think that such powers if entrusted to the local authority would be of value to the community?—Yes, I do.

3701. The Nuisances Removal Act of 1855, amongst other nuisances, describes those two, "Any animal kept so as be a nuisance or injurious to health; secondly, any accumulation or deposit which is a nuisance or injurious to health." Can you explain how it is those two descriptions do not cover the cases which you have mentioned of swine and dungheaps?—I cannot.

3702. Your attention has not be drawn to that section?—No; my attention has not been drawn to it. The inspector told me he felt that there was a want of additional power to deal with such cases in the Sanitary Acts of 1866 and 1868.

3703. He probably did not explain to you where the power failed?—Yes; he said that the Acts of 1866 and 1868 did not give the power.

3704. But he did not name to you the Act which I have just quoted?—I don't remember his having done so.

3705. I presume in your parish privies and ashpits still remain?—Yes.

3706. Are any of them in such a state as to be a nuisance?—They are being remedied by degrees. Some of them have not been dealt with, owing to the approach of the hot weather. I believe the surveyor received instructions to defer removing them during the summer months.

3707. On the whole, then, the progress of the removal of such mischiefs is satisfactory?—I think so.

3708. Have you considered how far some county authority would be of use in case the local authority were reluctant to move?—No, I have not.

3709. I mean some intermediate body between the local authority, whatever it be, and the Home Office; a county board of some kind; have you thought of that?—No, but I have heard of arrangements recently made with regard to the powers of county justices, having reference more particularly to highways.

3710. But with reference to the whole question of the carrying out of the laws affecting the public health, do you think that a county board of any kind would be useful in a district such as yours, in the event of the authorities of the parish being inactive?—There is no disposition now to be inactive, as regards matters such as health and cleanliness. I think if we had any epidemic there it would be dealt with promptly. In fact, at my own suggestion, when we had small-pox there, about three years ago, the parties who were afflicted thereby were removed at once from the lower part of the town, and sent to a barn on the hill, and after their removal we had not another case.

3711. But assuming the inactivity of the local authority in a country district, do you think that a county board, properly constituted, would be an efficient stimulant, if entrusted with the necessary powers?—I should think so; and it would be very requisite too.

3712. Do you think it would be better to stir up an inactive authority by a county board in the first instance, than by going in the first instance to the Home Office?—Yes, I think so.

3713. (*Mr. Cave.*) Is not there a recorder with a very peculiar jurisdiction at Seaford?—Yes; Mr. Wyatt is the recorder.

3714. Is not his jurisdiction very peculiar? Does not he go into matters which recorders generally do not touch, or is he only a judge in criminal cases?—He generally goes there on occasions when a legal opinion is required for the guidance of the justices. Whenever they feel any hesitation about acting in any particular case, they generally try to have his assistance; and I believe, as a rule, he is expected to be there on the quarterly assembly days. I believe it is an honorary office on his part. I am not aware that he receives any fees or emoluments.

3715. He has nothing to do, I presume, with the corporation or their affairs?—No, I think not. There

is a clerk to the corporation, Mr. Gell, a solicitor of Lewes.

3716. Was not there a law-suit, or an application to the Board of Trade, a short time ago, with reference to taking boulders away from the sea-bank in front of the town?—Yes, there was.

3717. What was the nature of the claim set up, do you recollect? It was by a fisherman, was not it?—Yes. I think an application was made to the Board of Trade for protection to prevent parties from sending lighters to the beach and removing the boulders, which constituted its strength.

3718. The sea makes a clean breach over it occasionally, does it not?—Yes. We had an inundation, which laid the town three feet under water, three years ago, in January 1866.

3719. And that of course would seriously interfere with the drainage for a considerable time afterwards, would it not?—I should think so; and I should say that if the barrel drain was not constructed upon a very strong principle, the surface water, if of any considerable depth, might burst it in.

3720. And the drying water of course would make the place very unwholesome in the marsh between the town and the bank of shingle?—We have very little of that now.

3721. Has that been raised?—Yes, it has been raised. Dr. Smith, who is the lessee of the land, has been raising the front of the common. He is doing a certain amount of good there; but still the land has been alienated from the people for ever, I may say, his lease being for an unprecedented term, namely, 299 years.

3722. Is the place increasing as a watering-places, —Yes, it is.

3723. With a better class of houses?—Yes.

3724. I suppose you will gradually get a class of people who will be more likely to take enlightened views on these things than you have at present?—Yes, I should hope so.

3725. And the clashing of authority, and the bad working of the arrangements, which you have mentioned, is rather from the peculiar circumstances of the town having gone back, and having a constitution scarcely fit for the people at present in it?—Quite so.

3726. (*Earl of Romney.*) The corporation have not any power to impose upon the inhabitants a tax of any sort or kind, have they?—No, I believe they cannot levy an additional rate; but the jurats acting on the part of the corporation sign the order for the county rate, which includes the expenses connected with having a constable in the town, and matters of that sort.

3727. They do not make the rate, but they sign the order to enforce it?—Yes; that is, they authorize the clerk of the union to pay the amount.

3728. Is there any borough rate made?—The borough rate merges into what is called the county rate.

3729. From whence does that county rate spring? Is it from the justices of the county?—The justices of Seaford sign the order, and it is sent to the clerk of the Poor Law Union, and he accordingly pays the money; it is charged upon the poor rates.

3730. Seaford contributes towards the county rates of Sussex, does it not?—No; we do not contribute towards the county of Sussex rate.

3731. Then you pay what you call a county rate, but what one would rather call a borough rate?—I should say that a portion of that county rate is appropriated to defray the expense of having lunatics from our parish maintained at the county asylum.

3732. What authority makes the rate?—I do not think that the rate is actually made, but the expense is calculated, and all the items amount in the aggregate to a certain sum, and a notification of that amount is sent to the jurats of Seaford by the clerk of the corporation.

3733. Do the jurats really serve the places of the justices?—Yes.

3734. And those justices make an order to pay a lump sum out of the poor rate for the town purposes?—Yes, every half year.

3735. Is that order made at any sessions, or when is it made?—At a quarter session.

3736. But that they do only on application; it does not originate with them; they do it on being applied to?—They do it on being informed by the clerk of the amount required.

3737. Excepting such action as that, no other thing is done excepting at the sessions, I suppose?—Except when they have special meetings with reference to the arrangement of their own affairs and the management of their property.

3738. Then they cannot clash with any other authority at all?—No; I think the sewer authority is wholly independent of the corporation now. There are nine members of the corporation on the committee of the sewer authority.

3739. You say, do you not, that you are satisfied with the management of the place now with regard to sanitary matters?—Yes, as far as I can form an opinion.

3740. But still you wish, do you not, for the Local Government Act?—No; I should wish for a water supply.

3741. And that can be done, can it not, by the parties who are at present in possession of the power?—So it would appear, if I read the Act rightly.

3742. At the time when application was made, and it was considered whether the Local Government Act should be put into operation or not, you said there were seven persons who voted for it and 40 against it. Did the seven belong to one class of persons, and the 40 to another class of persons, in point of social position?—The seven persons were of different classes; persons, in fact, who generally act together in all matters.

3743. Were they the principal persons in the place?—They were amongst the respectable classes.

3744. And with respect to the 40, were they farmers or labourers, or what were they mostly?—They were of all classes; ratepayers of course.

3745. You say that the person who acts as inspector of nuisances in Seaford is the relieving officer. Does he do his work well?—Very well.

3746. Does he act in any other parish as inspector?—He acts as relieving officer in small parishes close to Seaford, and within the district assigned to him by the guardians.

The witness withdrew.

(23.) William Winkley, Esq., examined.

3747. (*Chairman.*) Are you clerk to the Local Board of Health of the district of Harrow?—Yes.

3748. And also vestry clerk of the parish of Harrow?—Yes; they are not co-extensive.

3749. What is the acreage of the parish of Harrow?—The extent of the whole parish is a little over 10,000 acres.

3750. What is the acreage of the district?—About 1,000 acres; about a tenth of the parish. It would appear that I am now also, as vestry clerk, clerk to the sewer authority for the district beyond the local board of health district.

3751. What is the local board of health for the district of Harrow?—It was established by a Provisional Order under the Public Health Act of 1848.

3752. In what year was this Provisional Order passed?—In 1850.

3753. Then the powers of the Act of 1858 became applied to you, did they not?—Yes.

3754. What is the population of the district?—The population now, I should think, is about 4,000. At the last census, which was in 1861, it was about 3,000.

3755. Is the town of Harrow a part of the district?—That is the district.

3756. But is a considerable portion of those 1,000 acres rural?—Not very much; the district just skirts the town.

3757. And do you say that the district is chiefly covered with buildings?—Yes, chiefly so.

3758. Have you found your powers of general local government sufficient, or not?—I think that the board of health have had no difficulty at all. I think they have had ample power to remove nuisances, and to construct drains. A great deal was done originally, not so much from the power that the board had as from a very good feeling existing on the part of the population. We did an immense amount of work without paying compensation. I suppose that no district board hardly in the country went through private lands to the extent we did at so little cost in the shape of compensation.

3759. Is the whole parish of Harrow which you say is 10,000 acres (the district only being one tenth) a union for poor law purposes?—It is part of the Hendon Union, the whole parish is in the Hendon union.

3760. Do any difficulties arise from the portion of the parish which is not under the local board of health having different authorities to deal with from the portion which is under the local board of health?—The authorities for the parish, exclusive of the local board of health district, have changed I think something like three times in the course of a few years. Originally there was a nuisances removal committee, appointed by the vestry, and then the board of guardians continually made representations that the nuisances of that part of the parish beyond the local board of health district would be much better attended to if they had charge of that part of the parish, and ultimately the vestry, from those frequent representations, and knowing that there were a great many difficulties and a great many nuisances existing in that part of the parish, refrained from appointing the committee, and then the duties all passed to the guardians. I am sorry to say that since the guardians, who promised so much before, took charge of this part of the parish, they have really done nothing. I mean they have done no more than the original committee, from the unsatisfactory state of the sanitary laws, which are so conflicting and so unsatisfactory. The parish vestry, or the inhabitants of that part of the parish lying beyond the local board of health district, would now appear to be the sewer authority for the said part of the parish.

3761. In fact, one portion of the parish being under the local board of health and nine-tenths of the parish not being under the local board of health, the action of the Sanitary Acts has been obstructed?—I think so, to a certain extent. I do not think there has been any disposition on the part of the sewer authority, whoever has been the sewer authority, to carry out the Acts to the extent that they might have done.

3762. The power of the vestry in the part outside the local board would be much more limited, would it not, than the power of the board of health in the district?—Yes, much more limited.

3763. It would only apply to the abatement of nuisances and such like objects?—But still there are much greater powers, I think, under the Sanitary Acts of 1866 and 1868.

3764. At all events this has stood in the way, both of the abatement of nuisances and the construction of drainage?—It has. Then the justices, when nuisance cases have been taken before them at petty sessions, instead of assisting the parish officers or the nuisances removal committee, have rather gone against them, and not assisted them, so that they have felt altogether that the law as it stands at present was inoperative, and that they could not really carry into effect the different Acts.

3765. How have you found that section 7 of the Act of 1867 operated which provides that where part of a parish is under the Act of 1858 the other part shall be constituted a special drainage district?—With regard to that Act it appears that both the Local Government Act Office and the board of guardians themselves were quite ignorant of the effect of that section, because up to within a very recent time the board of guardians considered that they were the sewer authority as well as the nuisances removal authority, and it was not till by accident we found that there was that clause in the Act which limits the forming of that part of the parish into more than one special drainage district to three months, the Act was hardly published till the three months were elapsed, and we feel that that is a great hardship. In fact the time had elapsed before the parish, the guardians, or any of the local authorities were aware of the existence of that clause in the Act, and the parish being so extensive, 10,000 acres in extent, and only small portions being very thickly inhabited, no part being like the town, although we have a number of hamlets in clusters of houses, the parishioners feel that to make the whole of the district one special drainage district, to be liable to drain every part of it, and to make one part of the district which might not be at all benefited pay for the drainage of another part, would be a great hardship, and they feel that that clause ought to be amended.

3766. Would you in fact propose that the 6th section of the Sanitary Act of 1866 should be restored?—Yes, or the 7th section of the Sewage Utilization Act, 1867, amended.

3767. What then would be the law, supposing that section were restored?—The parish authorities would have the power under the 5th section of the Sanitary Act of 1866 to cut up the parish into special drainage districts, and the inhabitants under the 6th section power to appeal against the constitution of such districts, if aggrieved, upon petition to the Secretary of State.

3768. Have you any suggestion to make as to the payment of the expenses of the sewer authority?—The highway parish of Harrow is that part of the parish lying beyond the local board of health district, and forms part of the Edgware highway district, the highway rate being payable by the same parties who would pay the poor rate or any other special rate to be made by the overseers, and in such a case as that, where a rate is already in existence which every ratepayer is liable to, the whole of the expenses of the nuisances removal committee or the sewer authority should be paid out of that rate, rather than that a very small separate rate should be levied. I think that the multiplicity of rates a great trouble to collect; they are never thoroughly collected, because the amounts are so small that they never pay for the expenses of recovery; and if there were a highway rate, or a rate of that kind, and the proposed rate could be made part of it, and be chargeable upon the waywardens, it would save a great deal of trouble. At Harrow we make a poor rate for the whole parish, including the highway parish and the local board of health district, but we do not make a separate poor rate for the highway parish.

3769. Do you mean by the highway parish the part of the parish not under the local board?—Yes. We do make a distinct rate for the highway parish for the repair of the highways. The law has been altered two or three times. At one period the nuisances removal expenses were paid out of the poor rate, then the law changed, and then they were payable out of the highway rate for that very district, and that was a most convenient way, because, in the first instance, when it was paid out of the poor rate, the ratepayers of the Harrow local board of health district were actually paying rates for two nuisances removal committees; they were paying for their own district and paying a certain portion for the outlying district, inasmuch as the whole was paid out of the poor rate which extended over the whole parish. Then there was a change after that, by which a separate rate was to be added to the existing poor rate, and to get over that difficulty a small rate of one penny was added to

the poor rate of those persons who live outside the local board of health district, but that so complicated the accounts, and it was so difficult to keep a separate account of each rate, that I am quite certain that if it could be kept distinct, supposing Harrow were to remain an entire special drainage district, and there is a rate of any kind, whether it is a highway or any other rate, the expenses of that kind ought to be paid out of that rate and not by any special rate.

3770. You think not only it would simplify the accounts, but would also economize the expense of collection?—It would considerably, because when you get to a very small rate like that, a matter of 1*d.* in the pound, you could not get the rate collector for an ordinary commission, and you could not recover arrears, for the expenses of recovery would be more than they were worth.

3771. Are the local board practically put to much expense in recovering rates by lawsuits?—No; the ratepayers themselves are liable to pay the legal expenses up to a certain extent, but beyond the legal expenses chargeable upon the ratepayers, there must be of course expenses which the board must pay.

3772. Do you think that local boards are exposed more than they should be to the expenses of law suits?—If the legislature will throw certain liabilities upon local boards, and desire to drain towns, they should have given greater protection; and I do not think that local boards ought to have been subject to so many lawsuits as they are. At Harrow we have had one, and are threatened with two or three others. Local boards should not have been established at all unless the legislature had given them more power generally than they have got, because they are ordered to do certain things, and the moment they move and attempt to drain and carry the nuisance beyond themselves they get into trouble. I think that where the natural drainage of the country tends, the local boards ought to have some greater immunity than they have got. Where the land is always drained I think that the local boards ought to have greater rights than where they go through any diverted course.

3773. What power do you think they should have?—I think that where there is a natural drainage of the country, if any person in the course of that drainage dams it up, for instance, and makes an ornamental water, or anything of that kind, he ought not to have the power of coming against a local board for any nuisance that he himself arrests. I think that the natural drainage of the country should be left free, and that the local board should not be liable to compensation when their drainage takes that course.

3774. Do you think that there should be more power of arbitration or reference to a jury?—Arbitration, I am afraid, is very unsatisfactory, unless there is always accompanied with it one provision, that is to say, that there should be a reporter present to report the evidence. Then I think there would be some safety in arbitration, but not without, because our own experience of arbitration in one instance was that the arbitrator gave an award against the evidence; indeed, I may say, quite contrary to the evidence.

3775. Do you think that there are cases in which the owners are made more liable than they should be?—I think that we have the option of coming either upon the occupier or the owner; in default of the occupier we can go upon the owner. We have known several places where persons are completely hemmed in, and the landed proprietors around will refuse to allow them even to go a few feet in some instances just to connect their private drains with the sewer. I do feel that in the case of persons who own property surrounding a town in that way the law ought to protect the local boards, and make it a duty on those landowners that they should give every facility in their power to get rid of those nuisances. Originally this land probably was unenclosed; it was all common land; but now it is enclosed, and the people have not an outlet or an easement.

3776. What is your opinion as to the extension of covered sewers?—I think that there are some instances where covered sewers empty into private property by natural drainage, perhaps, and many persons would be quite willing to convey that sewer beyond the limit of their own property, but they are afraid to do it, because the moment they attempt to make a covered sewer the persons who live beyond their property will at once perhaps enter an action against them; and I feel that they ought to be protected, and that the person who creates the nuisance ought to be the person who is liable, and not the person on whose land the nuisance is found, unless he himself shares in contributing to the nuisance.

3777. Those are suggestions which I presume you make from your experience with regard to the works carried out at Harrow?—Yes.

3778. What is the general drainage of Harrow?—As far as Harrow town is concerned, it is well drained; it stands on a hill, and all the nuisances we have got we have carried to our neighbours, with the exception of one outlet. At present we have bought some land, and are going to try a system of sewage irrigation. We think that that is the best thing, at present. I have thought myself that, unless there are some great main arteries cut throughout the country, so that we could branch into them, sewage irrigation, and all those schemes, if they are not daily carefully attended to, become a nuisance in a few hours. When you come to small places and small villages like there are in our parish, if we make our parish into special drainage districts it will be impossible for those districts to do any works of drainage satisfactorily, or to have sewage irrigation. I do feel that unless there are some great sewers running throughout a large area into which the small districts can drain, it will never be thoroughly satisfactory, unless you take the greatest care, and you have to educate the people to bring them up to that, which I am afraid is very doubtful.

3779. You are rather indicating the conservancy of river beds where a complete water shed should be dealt with by that authority?—Yes; I think something of that kind.

3780. Do you think that a central authority of some sort should furnish plans which might direct the local authorities to make their plans fall in with the general plans?—Yes, I think so; or that they should advise them. I think that some central authority should so inform itself of the best plan, that it should be the source of authority, and that power should not be given to local authorities to do sewerage works unless there was thorough satisfaction that it was the best thing to be done, without any doubt. I mean this, that the opinions even of the central authority are wonderfully changed. All those experiments have been tried, and an immense amount of money has been sunk, and rates mortgaged for so many years, that it is a very serious thing, because in our own plan of drainage I have no doubt that if the drainage of Harrow were to be re-arranged, and the whole thing examined, we should, in place of having four or five outfalls, have perhaps about one or two at the outside. So that it wants great care before those powers are really given so freely.

3781. If your plan were carried out, what sort of area would Harrow belong to?—I hardly know. I should like, if it were possible, to get our drainage connected with the metropolitan sewer.

3782. Looking at that map on the wall, would it not be a part of the large area of the Thames?—I suppose it would.

3783. Have you considered what should be the authority for making arrangements if such a large area could be constituted, and combining the local authorities, so that, for instance, the Harrow local board of health would send a representative to it?—I believe myself that large local boards of that description are not so beneficial. I will take the

highway board as an instance. I know there are waywardens who have very large parishes themselves to attend to, and when they attend those boards the whole of their time is taken up in attending to parishes quite at a distance, and it is quite impossible for a very large area to be managed in that way.

3784. Have you had much to do with the Local Government Act Office?—Yes; I have been clerk to the Harrow local board 19 years.

3785. Can you tell us some of the cases in which you have had to communicate with them?—I have had many cases. I had, before we borrowed the money, to submit plans to the Local Government Act Office. We have always found the greatest attention ourselves on the part of the Local Government Act Office, and we have always got the most reliable information from them.

3786. Have you ever been inspected by them?—Yes, frequently.

3787. To what extent have you borrowed money?—I think altogether about 9,600*l.* We have not borrowed very much money. We have done a great deal out of our yearly rates from time to time. As to the last sum that we have borrowed, we have hardly expended it all yet. We have just now, under the Lands Clauses Act, bought some 15 acres, to try a sewage irrigation scheme.

3788. For what purpose did you borrow the money?—We originally borrowed the money to make permanent sewers, and lately for the purpose of sewage irrigation and the erection of offices.

3789. How was it borrowed?—It was borrowed to be repaid over a period of 30 years, by instalments of principal and interest combined.

3790. Where was the money obtained from?—We borrowed it upon the security of the rates from the County Fire Office; they lent us a portion, and other offices also lent us some, under the sanction of the General Board of Health and the Secretary of State.

3791. Have you any suggestions to make as to encroachments on highways?—I think that local boards ought to be the conservators of the public interest, inasmuch as they are the surveyors of highways; but it so happens sometimes that they have parts of turnpike roads within their district. There are certain Acts of Parliament which give the width of highways, and I feel that if the turnpike trust neglect to do their duty in keeping the original dimensions of the highways, local boards of health ought to have the power clearly to take proceedings against any person encroaching upon the legal limits of a highway.

3792. Do not you think it desirable that all such subjects should be under one authority as much as possible?—Yes, I think so.

3793. Including highways amongst other things?—Yes. The highways generally within the district are under them; but still the rights are reserved of turnpike trusts who have highways within their district.

3794. Where the trusts fail to take action, you would give power, would you not, to the local boards?—Yes.

3795. What have you to say as to the section about the disqualification of members of local boards?—There are several doubts about that. For instance, parties interested in contracts are not eligible; but then there are certain exceptions made, that if any person is a proprietor, shareholder, or member of any water company, or company or *concern* for carrying on of any other works of a like public nature, the clause does not apply; and it so happens in practice, from the wording of the clause, that it is sometimes difficult to define clearly who is or who is not eligible to serve on local boards. I think you will find that the clause in the Public Health Act, 1848, and that in the Local Government Act, 1858, as to disqualification and exceptions, require to be made more clear.

3796. Do you mean that the different Acts conflict as to the disqualifications?—No; but it would appear that the clauses as to exceptions in the Public Health Act, 1848, and in the Local Government Act, 1858, do conflict.

3797. What suggestion have you to make as to the power of local boards over fairs?—At Harrow we have an annual fair, which is held in the town and on the highway, obstructing a portion of the legal highway, and the police appear to have no power to put a stop to it. There is no charter for the fair; it is simply an old fair by custom, and I think that the local board, having so full power of regulating markets and fairs of that character, ought to have power over pleasure fairs, either to control or to abolish them if they become a nuisance; or, if not to do away with them, they ought to have the power of fixing the place where they are to be held, whether on private or public property, but in no case should they be allowed to occupy a portion of the highway. This fair actually occupies a portion of the highway which is a part of a metropolis road.

3798. And the law is defective in giving the boards sufficient power to deal with this matter?—It is defective in that respect.

3799. (*Lt.-Col. Ewart.*) Have you had occasion to communicate much with the central authority, that is to say, with the Local Government Act Office?—Yes; we have very frequently had to do that in the course of some years past.

3800. Do you think there would be an advantage in having an intermediate authority with whom you could communicate; for instance, a county authority?—I am rather doubtful whether that would benefit the public, speaking from experience with regard to the adoption of the highway board, which has proved quite a failure, as far as Harrow goes. There was a strong feeling expressed on the part of the people of Harrow to the justices at quarter sessions, that the highway board should not be carried out, but their representations were not at all heeded. I do think that a central authority would have paid more attention, and would have acted more independently, and have been less influenced by strong local influence than a county board or quarter sessions would have been.

3801. Have you any system of nuisance inspection?—Yes; we have an efficient surveyor, who is also inspector of nuisances, but his time just now is taken up in preparing the irrigation project that we have in hand.

3802. Does he do anything else, or is his time entirely taken up by the duties of his office?—His time is entirely taken up by those duties. He is the surveyor, the inspector of nuisances, and the collector of rates also; but latterly his duties have been so much in connexion with the surveyorship that the board have appointed an assistant collector.

3803. Have you any medical officer of health?—We have no officer of health, but we have always had a medical man on the board.

3804. Have you had any difficulty in obtaining land for the sewage irrigation of which you have spoken?—We have had a difficulty. We were obliged to put in force the Lands Clauses Act; we could not buy it by agreement, and we have had to pay very dearly for it. When I tell you that for about 17 acres of land we shall have to pay for 30 years about 263*l.* 19*s.* 8*d.* a year, you will see how dear a bargain it has been. It was merely agricultural land, and without any road to it, one might say, or nothing but a green lane leading to it.

3805. Do you discharge the sewage on to it by gravitation?—Yes; we are just about to do it.

3806. Will it take the whole of the sewage of Harrow?—No; it will only take about two outfalls. It will take probably the sewage of about one fourth of the area of the district.

3807. Then what will become of the rest?—That we intend to deal with in a similar way when we can get land; that is the difficulty we are placed in, having so many outfalls.

3808. (*Mr. Bircham.*) Is this the result of an arbitration, or what else has landed you in the payment of 263*l.* 19*s.* 8*d.* a year for 17 acres of land?—

We had to get the consent of the Secretary of State to put the Act in force, and then an Act of Parliament was obtained to confirm it.

3809. And you required ultimately to put in force the powers of the Lands Clauses Act?—Yes.

3810. And having put them in operation, is this the result of an arbitration, or a jury, or a compromise?—It is the result of a kind of compromise. We have not yet completed all the purchases; there is one small field yet to buy, and in that case I am afraid we shall be obliged to resort to arbitration.

3811. Is this an arrangement for 30 years only, or is it perpetual?—It is for 30 years; that is to say, we have borrowed the money for 30 years, and we repay it by equal instalments.

3812. So that you will have the land in fee simple, having paid during 30 years 263*l.* 19*s.* 8*d.* a year?—Yes.

3813. Have you found convenience as a local board in having the highways under your jurisdiction?—I think it is better, although several members of our board from time to time have thought that we should have been better to have been saved that trouble, and not to have had the highways; but I, myself, think it is better for the board to have the highways, because for the purpose of scavenging and other things it gives the board great control over the whole place, and in the case of the formation of sewers also.

3814. Does your experience, where you have had the highways in your hand, induce you to say that it would be desirable that sewers and highways should be governed by the same authority?—I think so. I think, with regard to Harrow, it has been a misfortune that the part of Harrow which is beyond the local board of health district has been associated with the Edgware highway district. I am certain that the highways are worse repaired, and are much more expensively kept in repair, and they are neglected. I mean that the surveyor, instead of having 24 or 25 miles of road to look after, has now got 100 miles; instead of having one surveyor, they are obliged to have one and two assistant surveyors; so that the whole thing is much more expensive, and much worse altogether.

3815. Do you speak with accurate knowledge as to the number of miles of road within the highway district?—Yes; in the whole parish of Harrow, all the highways that were gravelled or metalled, as they term it, were about 30 miles; the Harrow local board of health, I think, has about 6; and the rest is about 24 miles.

3816. What is the length of roads in the district which you speak of as too large for economical management?—I think there are about 100 miles in that district.

3817. If I understand you, only a part of Harrow is in a poor law union?—The whole of Harrow is in the poor law district for purposes connected with the poor.

3818–19. Is the poor law district conterminous with the highway district?—No, with the whole of the parish; the highway district is the whole of the parish of Harrow less the local board of health district.

3820. Besides the parish of Harrow, are the same parishes included in the poor law union and in the Edgware highway district?—Yes, precisely the same parishes.

3821–2. I gather that you would be of opinion that for health purposes in country places not under the Local Government Act it would not be wise to make it into districts such as poor law districts?—I think not. I think it would be a misfortune; there would be a loss of local care. I think there ought to be some superior authority to appeal to, and to see that the work is done, but I think not to do the actual works. Where boards are multiplied into unions it is a mistake.

3823. (*Mr. Shaw.*) What class of inhabitants take an interest in and serve on those boards?—I think, on the Harrow local board of health, we have been always very fortunate. It has principally been the gentry of the parish; but lately there has been a little dissatisfaction on the part of the ratepayers with regard to the money that we have been spending, and now the tradespeople and persons of that class insist upon having a position on the board; but for nearly the whole time all classes have been represented to a certain extent, but the preponderance has been of the gentry who have taken an interest in it. I think that is in a great measure owing to the public school there, and, no doubt, for Harrow to have the reputation of being well drained is very important.

3824. One would think that the tradespeople were more directly interested in that than the gentry, unless the gentry had their sons there?—Of course it is important to all to have the place as healthy as possible. Speaking of the parish, I believe that a great many committees have been appointed specially to do nothing, and I believe most of those nuisances removal committees throughout the country have been appointed, and have got their own party in, really to obstruct rather than that any money should be laid out. I am speaking now of the district beyond the local board.

3825. But you do not find that there is any lack of zeal on the part of the gentry to serve on those boards?—Not at all.

3826. (*Mr. Powell.*) I gather it to be your opinion that, speaking of the country generally, there is an indisposition to execute sanitary improvements in a spirited manner?—I think so, in the country generally. I think, when you come to a town, and you have a local board, there is a great desire to carry out sanitary matters; but in the rural districts, I am afraid, owing probably to the expense, they are afraid of structural works and things of that kind, and there is less desire to carry them out.

3827. Do you think that in cases of that kind, where there is reluctance, it would be of service to have a county board, which might press upon the local board, and compel action, instead of making it necessary to go to the Home Office in each case?—Perhaps it might be. Probably a county board dealing with such persons might have more influence over that class of persons than any direct influence from London; but at the same time, I think that in a central office things are often done more thoroughly; they have greater experience; they gain greater knowledge, and they have a staff of able men always to assist them, and I think that the work is more likely to be better done from some central authority.

3828. But you think that the more social and gentle influence, so to speak, of a county board, as compared with the drastic power of the Home Office, would be of value?—I think it would be of value. I think the farmers would be influenced by mixture with a county board; they would have the country gentry, and perhaps some representatives from their own locality, and in that way I think more might be done probably than direct from the Home Office.

3829. Are we to understand from your evidence that you think the authorities of a district ought to be able to discharge their sewage upon the next district, and so forward?—I do not say that, I think an unlimited extension of sewers is a great mistake. I think that boards have been too eager to carry a nuisance from themselves to other people. That is a great mistake, and we ourselves have got into trouble from that cause. It is so easy to add a few pipes on to a sewer and carry the nuisance to your neighbour. When we kept it nearer to us we could deal with it in our own district perhaps, or our next neighbour's land; but the moment we carry it beyond, we get into an enemy's country, and we find that either the fish are dying, or something of that kind takes place, and that we are doing injury among persons who have no sympathy with us. Therefore I think that an unlimited extension of sewers is a very bad thing. The sewage ought to be dealt with as quickly as possible.

3830. You would not allow a local authority so to discharge its sewage into a neighbouring district as to create a nuisance?—No.

3831. When you stated that some further power

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was required with regard to encroachments on highways, had you in mind the 26th section of the Local Government Amendment Act, 1861, which says, that, "Where "a board of improvement commissioners or other local "authority exercising any of the powers of the 'Local "Government Act, 1858,' maintains and repairs the "highways within the area of its jurisdiction, the "69th section of the Act of the 5th & 6th William "the Fourth, chapter 50, shall be held to apply to "all encroachments on such highways." Does not that appear sufficient?—That does not meet my case. I mean a highway that may not be repaired by a local board, yet at the same time within the district of a local board, and is maintained by a turnpike trust, and when the width of such highway may be defined by a special Act of Parliament. We have had lately an instance where one of the metropolitan roads running through the town was encroached upon by the erection of a wall to the extent of seven feet. The board might not have taken action unless they had liked; they were not compelled to investigate the matter, but they had the wall pulled down, and have insisted upon the encroachment being restored under their powers as a local board, although they felt that they might have left it alone. It should be the duty and not the option of local boards to prevent encroachments. The authorities of the metropolitan roads were not only ignorant of the Harrow Enclosure Act which I pointed out to them, but they had almost given their consent to the encroachment, not knowing the legal width of the road.

3832. Of course you would not desire that any local authority should acquire property compulsorily, without paying the owner of it a proper sum for the prospective value?—Not at all. I think that compensation ought to be paid, but I think that a distinction ought to be made between going through private property in the course of making new drainage, and where the drainage is only a part of the natural drainage of the country. Where all drains have gone hitherto they have been no nuisance, people not having had any system of covered drains or waterclosets in former times; still I think that where the natural drainage of the country leads, local boards ought to have a certain power, even if by the payment of a very small compensation. I think that wherever there is a natural right of drainage, where every water will find its way, or anything that goes with water in that way, there ought to be certain rights reserved to local boards to use those natural sources of drainage.

3833. Do you think that a local board ought to have the power to turn a water-course, if it becomes a little foul by some accident, into a sewer?—If sewers are legal, that is to say, if it is legal to make sewers for the use of waterclosets, I think that local boards ought to have the power to use the natural drainage of the country, although everything is very much changed. In former times, the drainage would be no nuisance to any proprietor through whose land this ditch might go; but still I think that everyone has a right, and ought to have a right, to the natural drainage of the country.

3834. (*Mr. Cave.*) Is Roxeth in the local board district of Harrow?—The original name of the district was Harrow Town and Hamlet of Roxeth, but we have always called it the Harrow Local Board of Health, because Roxeth is only a part of Harrow.

3835. That is now a very thickly peopled district, is it not?—Yes, it is a very thickly peopled district.

3836. In what state are the cottages there?—I do not think we could hold them up as a model, although they have good drainage, and most of the cottages are drained, the bulk of them do drain into the sewers, so that it is the fault of the owners or occupiers, or the builder, in not insisting upon their draining, or if any one neglects to be drained.

3837. It is in that district, is it not, that there is generally an outbreak of fever year after year?—It is; because it is in that district where the people congregate together, and the poor chiefly reside; but no part of Harrow comparatively can be unhealthy. I mean if it is properly drained, because it is the finest situation possible.

3838. It has special facilities for drainage, as far as the lie of the land goes of course, but the soil is rather liable to retain any offensive matter, is it not?—Yes; it is a clay soil.

3839. Has the sanitary officer the inspection of this district of 1,000 acres, or of the whole 10,000?—Of the 1,000; the relieving officer of the union is the inspector of the other part of the parish and some other parishes in the union, and he is not the same person as our sanitary inspector.

3840. But your surveyor is engaged, I think you said, outside the district in carrying on drainage?—Yes, on land which is taken by the local board for the purpose of outfall near to the London and North-western Railway, about a mile and a half from the town.

3841. That is for the purpose of sewage irrigation, in the same way as at Croydon, is it not?—Yes; we are adopting quite that principle.

3842. (*Lord Robert Montagu.*) Did I understand you to suggest that great arterial drainage should be made to carry off sewage, on the ground that a nuisance arises in a few hours from the utilization of sewage?—What I believe is this, that if sewerage works and works of deodorization are neglected for the shortest time a nuisance would arise. They want the greatest care and continual care, and if they have that care there is no doubt that the sewage irrigation seems to be the best thing that can be done with the sewage.

3843. Do you speak from experience as regards the nuisance? Have you ever experienced a nuisance from the irrigation?—From matters that have come before us, because before we adopted this last plan of sewage irrigation we used to deodorize by carbolate of lime, and if that were continually used all smell was destroyed, but if they neglected to use it for a day in very hot weather all the evils would at once return.

3844. Have you ever been to Croydon?—Yes.

3845. Have you ever perceived any nuisance there?—The day I went to South Norwood they were just emptying the tank, and there certainly was some little nuisance arising from that; but still the water that came in as sewage at one end of the field went out at the other as pure water comparatively; and at Beddington the same.

3846. When you speak of care ceasing for a few days, what care do you refer to?—The sewage of course must be directed carefully over the land, because if it is allowed to stagnate it becomes as bad as ever; but if it circulates, and continues to circulate, it becomes deodorized.

3847. Then the nuisance arises only from carelessness, and not from the utilization of the sewage?—Only from carelessness. There is a difficulty at Harrow, as I was stating, in our having four or five outlets, because the great thing should be to concentrate all those outlets and all the works in one place, if possible, so that the greatest supervision might always be exercised.

3848. With regard to those great arterial drains which you have suggested, you would not carry them through the hills which surround the watershed, I suppose, but you would carry them down the declivity along the river basin?—They should just follow the watershed.

3849. And would you suggest that they should carry them the whole length of the watershed out to sea?—That is the idea that I have, but of course I do not place my own opinion as worth anything with regard to that. Considering the large amount of money that local boards borrow, and the expense that they are put to, I feel that that would be really the cheapest plan.

3850. You would have to make a great arterial drain from Birmingham to the mouth of the Humber for instance, and from Chipping Norton to the mouth of the Thames?—I have not considered the course

that they would take, or hardly their practicability, but I have thought such a thing could be done; if we could join, for instance, some great sewer within seven or eight miles of us, it would be cheaper than what we have now to resort to.

3851. You do not propose to carry it into the rivers?—No

3852. Then you would either carry it to the sea or run it on to the land?—Yes; one of those things.

3853. Have you ever considered how you would make such a large arterial drain. I suppose each parish would make its part, but some superior authority would have to map it out, and give them plans and sections on which they must work?—I have felt that the Government itself ought to make the main arteries, and the parishes drain into them, and I would have the Government work the larger schemes.

3854. Would you have them open drains?—No; covered drains.

3855. There would be an enormous expense involved in that, would there not?—Yes, there would; I merely mention that that would be a fine thing.

3856. Would not it be cheaper to utilize the sewage at once?—We are doing that ourselves.

3857. I mean for every place to be obliged to utilize the sewage compulsorily, and not to carry the sewage into the water?—It would be so, but I am afraid there are great difficulties; it could not be carried out practically throughout the country. You see the position that local boards are placed in frequently with respect to law suits; they cannot help themselves; they are in a most awkward position in every way.

3858. It appears that there are difficulties on both sides, and the question is, which is the smallest difficulty, is it not?—Yes; but then there is great difficulty in getting land; and when you get the land it wants great care and great attention, otherwise you will have the streams polluted. I think that the difficulties would have been less in comparison if Harrow could have joined one of the metropolitan sewers within some few miles of Harrow.

3859. If I gather your evidence rightly, you would compel all places to utilize the sewage, and compel the landowners to receive the sewage on their land?—I do not know about compelling the landowners, unless you bought their land, but I feel that the landowners should not be liable for the nuisances of others. For instance, we have now nuisances existing at Harrow beyond the local board of health district, very great and crying nuisances, which ought to have been remedied years ago. There are landowners in the neighbourhood who would be willing to put down a properly covered sewer, or to allow the sewer authority to do it on their land, to carry it just beyond the houses into the more thinly populated part; but they are afraid to do it, because an action might be brought against them directly for having done it, so that they require to be protected against lawsuits.

3860. I do not quite understand your opinion with regard to your carrying out works with a board of supervision over the local boards of towns and the different local vestries, but under the central authority in London?—That was not a proposition of my own. I was asked whether it would be a good thing; and I think that farmers and that class of persons sometimes would be influenced by an intermediate board more than perhaps a town board would be.

3861. And persons in towns would also be more influenced, would they not, by a board extending, we will say, over the whole watershed, than they would by their own local board, consisting of shopkeepers in the town?—I think they would.

3862. So that your larger board, having greater weight and consisting of persons of greater authority, might induce or compel the different local authorities in the towns to carry out the necessary works and improvements?—Yes, I think the great difficulty is to point out what the best thing to do is. If you could once establish that, you would find no difficulty in getting all parties to adopt it; but there is the great difficulty to point out the best means to meet all those difficulties.

3863. Do you think that when they knew that the improvements of the local board would create great expense, they would prefer to save their money rather than preserve the health of the poor? Do you think that there would be no feeling of that kind?—There is no doubt there would be a feeling of that kind among many.

3864. But the larger and the more authoritative the board is, and the more it consists of persons in a higher station, the less there would be of that feeling?—Yes.

3865. (*Earl of Romney.*) You stated with regard to cottages that they drain at present into some sewer?—Yes, in the town.

3866. Is that so in the rural part of Harrow?—No, they drain into cesspools or any place that they can; ordinary privies, for instance.

3867. Are they kept in good order?—I am afraid that some of them are very defective indeed.

3868. Has the earth-closet system been introduced into Harrow?—No, it has been considered, and it is felt that in some parts of the parish the adoption of those earth closets would be the best thing, because we should keep the nuisance from outfalls and open ditches.

3869. And the stuff would be used in the gardens and lands immediately adjoining?—Yes; the only difficulty is in getting the poor to be cleanly over it and getting them to manage it properly. It would be very difficult to do that, for the poor are not generally cleanly enough to use that kind of closet; they would neglect them, and a greater evil would arise.

3870. When you say "that kind of closet" what do you mean?—The earth closet.

3871. What kind of earth closet?—I mean that periodically the earth would have to be removed, and the poor would be rather careless about it.

3872. Do you understand by earth closet machinery like Mr. Moule's?—Yes, something of that kind?

3873. Would not it be quite sufficient if the earth closet was just formed on the surface of the ground and mould thrown over?—I have no doubt that that would do, but I was thinking more of Mr. Moule's plan.

The witness withdrew.

(24.) J. Howell Blood, Esq., examined.

3874. (*Chairman.*) I think you are clerk to the guardians of the Witham union in the county of Essex, of which Terling is one parish?—I am: I am also clerk to the Witham Local Board.

3875. Can you state what is the local government of Terling?—The police. The guardians were the nuisance authority, but inquiry was made into their conduct, and it was thought that they had not attended properly to their duties, therefore the penalty was enforced of taking it off their hands, and putting it into the hands of the police, and it is much better done now.

3876. Was that under the 16th section of the Act of 1866, which says that in any place within the jurisdiction of a nuisance authority the chief officer of police within that place may, by the direction of the Secretary of State, on its being proved to his satisfaction that the nuisance authority has made default in doing its duty, institute any proceeding which the nuisance authority of such place might institute with respect to the removal of nuisances?—Yes; the Secretary of State held that the former nuisance authority had not done its duty, and it was put into the hands of the police.

3877. What was the date of that?—It was somewhere about the middle of last year, 1868.

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3878. Was that when there was a great fever in Terling?—There was a very bad fever at Terling, and Dr. Thorne was sent down to view the matter, and to report upon Terling, and there has been a great deal of drainage done since. On Monday after I knew that I was to be examined here, I went over to Terling with the inspector of nuisances, and I may say that Terling is now really a most extraordinary example of a country place. There are hydrants, or, as they call them, stand posts, fixed up every 50 yards all over the village which have taps to them, to which every house has a key, and they let out some very capital water which they all like. This water is pumped up from a very beautiful spring twice a day, and a person has only got to go out of his cottage door to get as much water as he wants. That was done on the authority of the vestry. The confusion that we are in under the recent Act of Parliament is that there are so many authorities, and they seem to clash, and I think it would be well if we could get them into one. Fever broke out in Terling, and a number of things were wanted, such as disinfectants and appliances for the people, part of which it was the duty of what is called the sewer authority or the vestry to find, and part of which the board of guardians had to find; for instance, the making of wells and so on, which was considered necessary for a supply of water, fell upon the sewer authority, and the providing of an hospital also fell upon the sewer authority; but the overcrowding of houses, of which there were a great many, fell upon the board of guardians, and the removal of nuisances, which were innumerable, fell upon the board of guardians. So that to go to the water supply, that was done by the vestry, and the way that they did it was this, they borrowed of Lord Rayleigh 1,700*l.*, and they had an engineer, who was recommended by the Local Government Office, and I must say that he has carried out the work admirably. With regard to the nuisances which existed in Terling, if you refer to the report you can hardly conceive a place more filthy, and the Secretary of State took it out of the hands of the board of guardians, and put it into the hands of the police. They have the inspection of it, and they watch it carefully, and you will not find a bundle of rubbish about the place so large as a bushel. The police go to the person, and say you must not allow this to occur, you must take it away in a basket; and Terling is now certainly a model village.

3879. And does that arise from the interference of the Secretary of State when that great fever broke out?—Yes. It arose in this way: a medical man, not the medical man to the Witham Union, the Witham Union then being, as you will understand, the nuisance authority, but a medical man residing at Witham applied for disinfectants. The question was raised how are we to supply disinfectants; the Act only gives us the power, as the nuisance authority, to supply them to particular cases of individuals, and you want them strewed all over the place. The medical man was not satisfied with the answer which he received from the board of guardians, and he got a gentleman living at Witham, Colonel Shakespeare, to apply to the Home Office or the Privy Council to send somebody down. It all arose from that circumstance.

3880. Then the application was from Colonel Shakespeare?—Yes; it was a private application.

3881. Upon his application the Privy Council sent down Dr. Thorne?—Yes.

3882. And the medical department of the Privy Council wrote to the Home Office, and the Home Office sent down an inspector?—Yes, and he came down, and reported.

3883. Was the inspector a medical inspector?—Yes; Dr. Thorne from the Privy Council Office. Then we have since had Mr. Arnold Taylor, and Dr. Gover was sent down to apply some disinfectants, and he applied 50*l.* or 60*l.* worth of disinfectants. There was some question about payment for them, but the Home Office said the board of guardians must pay, and they have paid.

3884. It was at that period, was it not, that the inspectors who were sent down called upon the vestry to take steps for the permanent improvement of the health of Terling?—Yes; it was at that time that they called upon the vestry, and I may say that created a vestry.

3885. Terling was not aware that the Sanitary Act not only empowered them but made them responsible for their acts?—They were not aware of that.

3886. The inspector informed them in the first instance both of the provisions of the Act and what the Act made incumbent upon them?—Yes; the fact was that the first inspector, the medical inspector, insisted upon it that it was the duty of the board of guardians, and thereupon the board of guardians and the medical man did not quite agree. Of course I advised the board of guardians, and I then said that it was the duty of the vestry, and at last I convinced the vestry that it was their duty, and vestry did it immediately under the Act, under the superintendence of Dr. Thorne, who had been sent down to the board of guardians.

3887. What did the vestry do upon that?—The vestry sent for an engineer upon the recommendation of Mr. Taylor, and proceeded with the work. Lord Rayleigh advanced the money; the vestry gave him security for 1,700*l.*

3888. What are the works which they have carried out since then?—It was intended to have a reservoir, and to pump the water up into it, to supply the village, but they have never used it. They find they can do it very well without. They have a very large wheel, which is turned by water power in the river Ter, and the water that is sent to the village is supplied from a spring which rises in Lord Rayleigh's park, and there is an abundant supply of water for the whole village, and to turn this wheel. I had it put in operation on Monday, in order that I might see it, and it certainly seems to work admirably.

3889. Can you state what they have spent upon those waterworks? — The expense of them was 1,700*l.* as nearly as possible.

3890. Have they made any sewerage works?—Yes. There is sewerage all over the place. I do not think that the water is applied to the sewage, but they have outfalls in several places.

3891. What have they done in the way of sewerage works?—I do not think they have any sewerage works. They have merely drains from the houses on to different fields. They may occasionally flush them, but I do not know.

3892. Do you know the population of Terling?—I should think it is about 900.

3893. Can you tell us the acreage?—I think 3,000 acres.

3894. Can you also tell us the rateable value?—5581*l.* 12*s.* 6*d.*

3895. Can you tell us also the highest amount of rates which have ever been levied in the pound?—1*s.* 2*d.* in the pound for one quarter. I asked an occupier on Monday whether he had paid any rates for this water supply, and he said, "I do not think that at present we have paid any rate." I thought they must have paid a rate, because I knew that it had been more than half a year since Lord Rayleigh had advanced the money, and I went to the collector, and he said, "Oh yes, they have paid the rate, I have "put it with the poor rate, and collected it with that, "so that they have actually paid the rate for one "quarter of a year."

3896. Is there anything informal in that?—No, I do not think there is anything informal in it. I only mean that their attention had not been directed to it. I am merely speaking of one occupier, and he really did not know that he had paid it, but I find others did know the fact.

3897. Can you state the different kinds of rates which are levied in that parish, and the maximum of rates in the pound in any one year which have been levied?—At present only poor rate and highway

rate; the highest poor rate in the year 4*s.* 2*d.*, the highway rate 3*d.*, church rate formerly 2*d.*

3898. Is this 1,700*l.*, to your knowledge, all that Terling has raised for public works?—Yes.

3899. What are the arrangements with Lord Rayleigh for repayment?—I think that it is to be repaid to Lord Rayleigh in 20 years at five per cent.

3900. And the borrowing from Lord Rayleigh was sanctioned by the Secretary of State, I suppose?—Yes.

3901. Is that arrangement with the police officers to be the authority a permanent arrangement, or only for this occasion?—We have not made that arrangement; at least no authority that I am connected with; neither the board of guardians nor the board of health. The Secretary of State has made the arrangement with them.

3902. Do you understand it to be a permanent arrangement?—It is going on now. Mr. Arnold Taylor made a report that the board of guardians had not done their duty, and they certainly had not. I do not suppose that any board of guardians in the kingdom does; Witham union guardians had not. He said under the Act referred to he should put it into the hands of the police, and I think that it is permanently in their hands. And under the Sanitary Act of 1868 I think they hardly can put the powers back to the board of guardians, because by that Act they took the powers away. There is section 5, which says where the sewer authority and the nuisance authority are different bodies of men, that is, where the vestry and the board of guardians are different bodies of the men, jurisdiction of the nuisance authority in certain cases shall cease in respect of all matters over which the sewage authorities acquire power by this section. Therefore it appears to me that the powers of the board of guardians have, as a nuisance authority, dwindled down to almost nothing; in fact I hardly know what they are. When you turn to see what the sewer authority can do, and what it cannot do, and what remains with the board of guardians, it would appear that in the case of every new house the is erected the sewer authority of the place are to see that there is proper privy accommodation, and so on; but the Act does not say old houses, and therefore the question is whether the board of guardians are not the nuisance authority for old houses in that respect, and the sewer authority the authority for new houses. It is a very curious position to be in. In the case of new houses the sewer authority is the nuisance authority. Then again there is another thing. You find that the sewer authorities have the control of any refuse matter, or offensive matter, or drainage, upon certain premises about a house. That is taken out of the hands of the board of guardians, and that was the great thing that they used to have to attend to, but that does not appear to me to meet the case which we have in the country of hundreds of offensive ditches. That seems to me to be left in the hands of the board of guardians in the same way as the privies to old houses are. But nuisances in and about the premises of a house are put into the hands of the sewer authority; whereas the nuisances existing in fields appear to me to be left in the hands of the board of guardians; but I should think that the legislature could hardly have contemplated that one body of men should do one part of the duty, and another another; at all events it is very inconvenient.

3903. What, in your opinion, would be the best body to have all those powers in such a parish as Terling?—I am perfectly certain, as far as the inspection of nuisances is concerned, and the laying of informations against persons in the country, you cannot have a better body than the police. The police are constantly going about, and they certainly have not too much work to do; they are persons whose eyes are always on the spot, and they seem to me to do their duty. I have had the example of Terling before me for the last six or eight weeks, and they certainly do their duty very well and very quietly; and I cannot see why a policeman might not just as easily come to my office as clerk to the magistrates, and have a summons against a man for having a nuisance upon his premises, as he can take out a summons against a man for being found drunk upon the road. I do not see why there is a necessity for machinery, of making a report to the nuisance authority, and then the nuisance authority giving the man notice to remove the things. We have found the ill effects of that in Terling. It takes up too much time; whereas we want an authority that can be moved at once, and I think the best persons that you can have would be the police. I think that they would do their duty better than any other body, for I do not think much of the vestry.

3904. The police, according to your scheme, would only act as inspectors of nuisances?—Yes, with power to obtain summonses; and the magistrates would be the persons, as they are now, to adjudicate upon the case.

3905. Should there not be some permanent body with general power of local government?—There should be a body with general power of local government, but whether that is the board of guardians, or whether it is in the vestry, I do not think very material, provided it is in one body.

3906. We want particularly to know from your experience as clerk of a union, and from your knowledge of what is going on in different parishes, which of the two would be the best body, the board of guardians or the vestry?—I think the board of guardians would be the best.

3907. Why do you think so?—I prefer the board of guardians for this reason, that the board of guardians is a body always composed of members of a number of parishes, and the vestry is a thing really almost unknown. The constitution of boards of guardians has destroyed that interest in the parish which people used to have at one time, and which induced them to form themselves into a vestry, so that now, practically speaking, out of the 17 parishes in the Witham Union, I will venture to say that you would not find above two or three parishes where the vestry consists of more than the churchwarden, the overseer, and the collector of rates. They generally meet on Easter Monday, and on some day when they choose the overseer, and they seldom meet again.

3908. I suppose you think that so small a body would not be a very public spirited body?—No; because if you make that body, you make two bodies out of the same parish; you make the vestry and the board of guardians. We have one parish where a lady is churchwarden, and she is not a guardian.

3909. Do you consider that if the board of guardians was made the authority for such purposes the guardians should be elected specially with that view as health officers?—I think they should be so. It is very difficult to make a rule for a very large parish which shall apply to a very small one. What might suit a very large parish might not suit a common rural parish.

3910. Have you any suggestion to make to remedy the present confused state of the law?—No; I can merely point out what I consider the confused state of the law in putting some works on to one legal body, and some on to another; but I am not aware that there is confusion in any other way. In the Witham Union we have a board of health at Witham, and it goes on very well. We are laying out 6,000*l.* in drainage. We have not begun that drainage yet, but still the work is going on, and I should hope in the course of a month it will be in use; that is in the Witham parish; whereas in Terling parish it is under the management of the police; so that there we have two bodies; and in all the other 15 parishes it is partly in the board of guardians and partly in the vestry.

3911. Supposing the board of guardians was made the authority for the whole union, you would be the clerk for all local government purposes for the whole union, would you not?—Yes.

3912. Do you think that you living at Witham would know as much about the nuisances in Terling

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as the vestry of Terling?—I should not be what is called the nuisance authority. The best inspector for the nuisance authority is the policeman. I think it is a farce making the board of guardians the nuisance authority, because they cannot see the nuisances; the guardians live 13 miles apart.

3913. What inspectors of nuisances are there in your union?—Before the passing of the Act of 1868 the board appointed committees in the different parishes in the union to act, but since this Act was passed they consider that the committees are all at an end, and they really hardly know what to do. They are in a great state of confusion, there is no doubt; but a great deal of work had been done before, and probably no evil has arisen; but still all our committees are at an end, and they are endeavouring to put the works on to the vestry in all the 17 parishes in the union, with the exception of Terling and Witham.

3914. You have made a considerable outlay in Witham, have you not, for public works, both drainage and sewage?—We have a board of health at Witham, and therefore we have no difficulty at all; we have borrowed 6,000*l.*, and have nearly spent it all, I think.

3915. Colonel Shakspere is a a very active man in the parish, is he not?—He has been very active indeed. He is going to remove to a larger place, where he will have more scope for his abilities.

3916. (*Mr. Powell.*) Do you find that there is any jealousy or dislike on the part of the inhabitants of Terling to the police; do they at all resent the interference of the police, and the kind of supervision that is exercised over them by the police?—Not the least. I have heard it suggested that there might be, but I have made particular inquiries to find out whether it is so, and I am perfectly sure that amongst the poor people, and the class where you would think jealousy would arise, there is nothing of the kind. Most of the gardens in the country are open, and people may look into them. The police are perfectly well known to all the people, and if they do their duty in a good-natured manner, no jealousy arises or anything of the kind.

3917. Has the number of police been increased in this parish in consequence of the new duties put upon them?—No. It will be, I think, a very paying thing. We paid in one parish, Hatfield, 40*l.* a year for an inspector of nuisances, and I am quite sure that the police could do it quite as well. I think it will be economical, and it will be employing a person without taking him out of his regular routine of duty.

3918. If you employ the police generally, of course the management of the police for sanitary matters must fall into the same hands as those who have the managing of the police for other matters, and you will practically have something in the nature of a county board as distinguished from a parish board?—Yes. The plan which the Government adopted here was to appoint the police inspector the inspector of nuisances for the parish of Terling, and he lives four miles off Terling.

3919. I think that you scarcely apprehended my question, which was this: if you have the police acting in this way, they must be managed by the same persons who manage them for other purposes, and you would practically get the management of sanitary matters in the hands of the county magistrates, who manage the police. Or would you prefer having the whole of the sanitary matters managed by a county board instead of being managed by the local authority?—I think that the advantage in my experience in having local government bodies is, that we have never, except in one instance, found an efficient inspector of nuisances. The plan generally adopted by the board of guardians has been to appoint their relieving officer inspector of nuisances, and give him a salary, or pay him something. My opinion is that he is the last man who should be inspector of nuisances. I do not think he has time for it, and I do not think he is a good man to be inspector; but I think if they employ a policeman they get a most efficient man, and a man who is bound to do his duty and make regular returns, and you get something that you can rely upon.

3920. (*Earl of Romney.*) Do you think that because the police are employed by and are subject to the magistrates, it must necessarily follow that if they are made inspectors of nuisances, the inspection of such nuisances must be taken altogether from the board of guardians?—I think that the inspection of nuisances and the judging of nuisances had better be taken from boards of guardians altogether. I think that the penalty which the Government puts upon a board of guardians for non-attendance to their duty is considered by boards of guardians to be a great boon; I know it was so in the Witham board. The board of guardians were made the nuisance authority, and then the Act says, if you do not do your duty we will take it out of your hands, and put it into the hands of the police. In the case of Witham, the board of guardians were delighted with it, and they said "That is "exactly what we want. We do not want our body "to be constituted a nuisance authority. We are a "body for the relief of the poor, and it is rather hard "to put upon us the being this nuisance authority, "and to direct us periodically to go and inspect "nuisances in all the parishes." And if you come to consider it, it was rather a hard duty, or it would have been if they acted upon it; but inasmuch as I do not think that any board of guardians really acted, it did not do much harm.

3921. But if the inspector of nuisances were a policeman, the only thing he would have to do on having found a nuisance, would be to go and lay an information before the justices, and have the party summarily proceeded against?—Exactly so, and without the machinery of the board of guardians.

3922. There need be no new board appointed for the country, because the police are entrusted with the execution of that duty?—I do not think there need be any new board at all. I should suggest that with regard to monetary matters the board of guardians should conduct them, but I would take away from them the being the nuisance authority.

3923. But what would be the monetary affairs in the matter?—There is probably a salary to be paid to the inspectors, and there may be some expenses incurred; and all those, I take it, should be paid through the board of guardians, not through the vestry or police. I would put all payments into the hands of the board of guardians, but the acting authority into the hands of the police, exactly as I instanced before. I would treat a nuisance in the same way as I would treat a drunken man.

3924. Then if the police had laid an information and the usual subsequent proceedings had been taken, the costs would be a charge brought in by the inspector to the board of guardians, and paid under the authority of the magistrates?—Yes, exactly so.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 21st June 1869.

PRESENT:

THE EARL OF DUCIE IN THE CHAIR.

The EARL of ROMNEY.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
The Right Hon. STEPHEN CAVE, M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Col. CHARLES B. EWART, C.B., R.E.
SAMUEL WHITBREAD, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

(25.) JOHN PONSONBY, Esq., examined.

J. Ponsonby, Esq.

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3925. (*Chairman.*) You are the town clerk of Oldham, are you not?—I am.

3926. Will you state the position of the borough of Oldham in relation to the existing local sanitary authorities?—The mayor, aldermen, and burgesses, acting by the council, are the local authority in the borough, which is coextensive with the whole of the township of Oldham, and contains a population of about 83,000. I believe the council is the only authority for carrying out sanitary and other matters in the borough. The overseers and the guardians probably may have their own independent jurisdiction in the township, but that does not, so far as my experience goes, in any way clash with the powers and duties of the council. The township, however, is only part of a very large union which embraces, besides the township of Oldham, the several townships of Chadderton, Crompton, Royton, Middleton, Tonge, and Alkrington.

3927. Did you originally apply the Public Health Act?—No; the Public Health Act in part has been applied, but if you will allow me I will explain it in a few moments. I was going to say that any jurisdiction therefore which the guardians might have over the township of Oldham, would be exercised by the guardians not of Oldham alone, but by the guardians of the entire union, embracing of course those townships which I have named. Of those townships in the union, Crompton and Royton are each local board districts; Chadderton is governed, as far as it is governed at all, by a board of surveyors; and Middleton has a body of police commissioners acting under a local Act of Parliament. All those places are lying very adjacent to Oldham, and really in themselves form a compact and extensive district.

3928. Did they form themselves into local boards or local authorities at different times?—In 1863, in consequence of the peculiar state of things in Lancashire at that time, the corporation was disposed to expend a large sum of money, the object mainly being to provide employment for the distressed operatives. You will have heard probably already, that in 1863 a special Act of Parliament was passed with the view of affording relief to the manufacturing districts. Oldham, with the view of availing itself of that Act of Parliament, finding the powers which it possessed at that time quite inadequate for its purposes, adopted some parts of the Public Health Act and the Local Government Act, having reference entirely in the adoption of the parts of those Acts to the special objects which they had in view at that time, the first of which was to provide a place of recreation, and secondly to carry out a more extensive system of main drainage and sewering.

3929. You gave a different designation to the different local authorities in the different townships; are they constituted under different Acts?—The township of Crompton, with which the corporation of Oldham has nothing to do, and the township of Royton, with which it has nothing to do, are local board districts under the provisions of the Public Health Act and the Local Government Act, and I believe those places adopted the Local Government Act about the same time or subsequently to the period at which the corporation adopted parts of it, and most probably with the same object in view to a certain extent.

3930. Will you describe the local Acts which you have for the borough of Oldham?—At present we have only one local Act of Parliament; that is an Act which was obtained in 1865, and rather a voluminous Act, and I may say that it is very complete. I ought to state that we had a local Act of Parliament which was obtained in about the year 1826, and in the working of that previous Act of Parliament, it was found to have become quite antiquated, and in a measure greatly unsuited to the requirements of a large populous manufacturing town like Oldham, and the adoption of the Public Health Act and the Local Government Act served only to complicate very greatly the working of those Acts with the local Act and the general Acts of Parliament, and finding the great inconvenience and difficulty in working them, it was determined to apply for a local Act of Parliament, and in 1865 application was made to Parliament, and the result is embraced within the covers of this book before me. I may say that this Act of Parliament is framed on the principle, so far as it was found practicable, of codification or consolidation *in extenso* It was a work of course of very considerable labour, but I believe there is an advantage in possessing an Act of Parliament like this which is well worth all the labour and expense which we bestowed upon it. The great advantage of course is that every inhabitant, without searching through all the statute laws of the kingdom, is enabled within the compass of one book, which is not very large, to know all the local law by which he is governed, and I think that there is also another very striking advantage in connexion with a statute of this kind, that it is more likely to attract local attention than the provisions of a general statute.

3931. Is that Act complete by itself as it relates to Oldham?—With a few exceptions. Although the principle of codification was adopted with regard to all the general provisions that were likely to be in operation day by day or week by week, and those of course were taken *in extenso*, yet with regard to such provisions as the Lands Clauses Consolidation Act and the Waterworks Clauses Consolidation Act, and a few matters of that kind, they were incorporated by reference only.

3932. What is the district to which your local Act applied?—To the township of Oldham only, which is coextensive, as I before stated, with the limits of the municipal borough.

3933. Those other townships which you mentioned are under the general law, under the Public Health Act of 1848?—Yes, two of them are; one of them is under a local Act, the others are under the general law.

3934. What led to your applying for a local Act?—A very strong reason for making this application was the extreme difficulty and the complication in working under so many different Acts of Parliament. It is very difficult indeed to describe the trouble that is given to persons in my position in working those Acts of Parliament where they are so numerous. I think that Mr. Hayes, who is now the town clerk of Birmingham, and was formerly the town clerk of

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Wolverhampton, has very well described in his evidence many of the difficulties, and I believe that during the present session the corporation of Wolverhampton are the promoters of a bill, taking the Oldham bill as the foundation for the measure that they are now seeking. I may say that, with regard to the Act as it now stands, although every clause was carefully considered in the codification, still the general principle of the general Acts of Parliament is adhered to; any difference, that there may be, is in matters of detail and suggested by difficulties which may have been experienced whilst we were working the general Acts of Parliament, but in principle of course the provisions are the same as the general Acts.

3935. Have you any specific instances of the difficulties which occurred in working under those general Acts?—One striking difficulty which always presented itself in my mind was that when the council was sitting it was very difficult to say whether it was acting at one moment as the local board of health and at another moment as the council acting under the provisions of the Municipal Corporations Act, and under the powers conferred upon it by its charter. But the great difficulty of course was in reconciling the language of a variety of Acts of Parliament with the proceedings that were required to be taken.

3936. Are all your sanitary regulations now carried out under your local Act?—There are very few exceptions indeed in which we require, in matters generally arising in the town, to rely upon the general Acts of Parliament; of course there would be exceptions.

3937. Will you state now what sanitary measures you have taken since the application of your local Act?—I may say that our sanitary measures were really commenced before this Act of Parliament was obtained under our old Police Act and under the provisions adopted from the Local Government Acts; and since 1863, when that adoption took place, and when facilities were given by the Public Works Manufacturing Districts Act, 1863, of raising money for the purpose, the corporation have constructed about 20 miles of main drainage in the borough, at a cost to the ratepayers of about 15,000*l.* or 20,000*l.*; of that sum I believe we borrowed 14,000*l.* or 15,000*l.* from the Loan Commissioners; and in addition to those works the corporation have also constructed about 16,500 lineal yards of paved streets, through which run the main sewers, included of course in the 20 miles which I have mentioned, and in connexion with this there has been a vast amount of drainage into those sewers, connecting the drains of the dwelling houses with the main sewer.

3938. Where does your sewerage ultimately go?—It goes into the streams. We have no river in Oldham and we have no canal, but the town lies very well for the purposes of drainage, inasmuch as it is built upon a very considerable eminence with the ground falling from the centre on all sides. There are small tributary streams passing through the outskirts of the town, and into those streams on the different sides the outfall of the sewers takes place.

3939. Can you give us any information as to the rate of mortality before your sanitary measures took place, and your present rate of mortality?—I do not think that there has been any striking change in the rate of mortality since those improved sanitary measures, but I am very much disposed to think (which I consider equally important) that there has been very much less sickness, and although the mortality does not appear to have undergone any striking change, I do think that, as a rule, the town is generally in a very healthy condition. I can give the mortality returns generally, commencing from 1857 to the present time. In 1857 the death rate was 27·83 per 1,000; in 1858, 28·06; in 1859, 23·89; in 1860, 25·41; in 1861, 27·01; in 1862, 27·81; in 1863, 30·88; in 1864, 21·57; in 1865, 29·57; in 1866, 29·70; in 1867, 25·11; in 1868, 24·88. 1864 is the most favourable year, the rate being 21·57, and I believe that was the year in which the cotton famine was at its worst, and I believe that this state of things would not be confined to Oldham; I believe that the rate of mortality in many of the large manufacturing towns in Lancashire would be very much less in 1864, and thereabouts, during the period of the cotton famine than it generally is.

3940. Was that from the numbers migrating from those towns at that period?—No; it would be from several causes. I should think probably that one cause would be that there was less indulgence and less excess generally on the part of the population, and probably less employment might have had something to do with it.

3941. Will you explain why the want of employment should have reduced the death rate?—I cannot explain it more than that it is the fact that the mortality was less. I attribute it therefore to two causes; first, because the persons were unemployed there was less mortality, and there was less mortality because they had the less means for indulgence and excess. I may say that that is quite my own view, but I am confirmed in it by the testimony of a medical gentleman who has had a large practice in Oldham for many years, in which he states, "The "exceptionally low mortality in 1864 I am disposed "to ascribe to the cotton famine. The working "classes were deprived of the means of indulging to "excess (as I maintain as a class they do when "earning a high rate of wages) in eating and drinking, one of the most fruitful sources in these "districts of disease and mortality." He goes on to say, "I may mention a remarkable circumstance as "having come under my own observation many "years ago, when in a hamlet containing from 1,500 "to 2,000 inhabitants sickness all but disappeared "for 12 months during a temporary pause in the "mercantile prosperity of the firms on which the "workpeople there were mainly dependent."

3942. Was the infant mortality in Oldham also very much less in the year 1864?—I am afraid I cannot give that, for the rate of mortality which I have given up to 1867 I have only in general tables. But in 1868 and also up to the present period in this year the rate of mortality amongst infants is very high indeed. I believe that last year the infant mortality was something like 50 per cent. of the whole, and that probably so far as this year has gone it would be between one third and one half of the whole mortality.

3943. To what do you attribute the excessive rate of infant mortality?—I believe that it arises from a cause which has been mentioned, I believe, by Mr. Heron, the town clerk of Manchester, who seemed to think that it was a state of things common only to Manchester. Of course I agree with him as to the cause, but I differ with him as to the extent of it, for I believe that it is common to most of the large towns where highly remunerative employment is found for females, and that the large death rate amongst infants under five years of age, especially under the age of one year, is attributable to the early neglect on the part of the mothers.

3944. Do you find that persons of intelligence and position in Oldham interest themselves in sanitary matters?—I believe that the people in Oldham and elsewhere are becoming more alive to the importtance of an improved sanitary state of things, and that they are becoming better informed upon the subject, which I think there is a growing disposition to do. I know that we have strong evidence of it in Oldham by the fact that now we publish every week the state of the mortality in the borough, a thing that a year or two ago was never thought about. We have also been at the trouble and expense of compiling returns of the state of mortality, commencing with 1855; and every means is now taken to keep before the notice of the public the state of mortality, and at the same time to point out the localities where it takes place. The plan that we adopt now is to have a blank lithographed plan of the borough, on

which is shown week by week the mortality, indicating the cause of death.

3945. Is any record kept of the amount of sickness in the town?—I believe not. As the Commission will see, there are considerable difficulties in doing it under the existing arrangements, seeing that you have no means of enforcing it. There are always objections operating in the minds of different people against giving information of that kind.

3946. Have you any system of sanitary inspection in the town?—Yes. We have men constantly employed visiting the whole of the town for the purpose of enforcing such sanitary regulations as we have the power to enforce; and the result is that, taking last year, I believe that the inspector of nuisances was the means of correcting in one form and another upwards of 2,000 places where there were nuisances from some cause or another, either from defective drainage or insufficient privy accommodation, cesspools out of repair, and drains defective, or not properly connected with the sewers, and a variety of other matters of that class.

3947. Are you satisfied generally with the working of your local Act?—Yes, on the whole it works very satisfactorily. Of course it is not perfect; few Acts of Parliament are; but so far as we have worked under it at present we have very good reason to be satisfied with it. In some respects it has not been altogether popular, especially with regard to one subject, and that is with reference to the supervision exercised by the corporation over the new buildings. Up to the time of passing this Act of Parliament and the formation of the byelaws under it, every owner of property was free to lay out his land and buildings in any way he thought fit, regardless altogether of his neighbour or the public, and of course, after doing that so long, any interference is looked upon with very great jealousy; and I may say that we have once, or more than once, had to modify very considerably the byelaws that had been framed under the provisions of this Act, the byelaws especially with regard to buildings. The byelaws we frame apply more especially to the new buildings, not to the old buildings.

3948. Have you adopted byelaws of your own, or have you adopted the byelaws of the central office?—The model byelaws of the Local Government Act Office were taken as a guide, but we went to very great labour, almost as much labour in framing the byelaws as in framing the Act of Parliament, to procure the best information we could from all places where byelaws were in operation, and we framed what we considered the most desirable code for ourselves, taking the model byelaws of the Local Government Act Office as the main guide.

3949. Do you find your byelaws of insufficient weight or authority?—Of course there would be a decided advantage in the byelaws forming part of an Act of Parliament, because they would have the weight and influence of the Imperial Parliament, where they are byelaws framed by the local authorities it can be very well understood that influences are brought to bear upon the representatives to get the byelaws so framed as to interfere to the smallest possible extent with the rights and privileges of individuals, and on the other hand there are decided advantages in having byelaws, seeing that you can modify them and alter them to new circumstances. The great objection to byelaws at present in my opinion is, that when made they are liable to be questioned; that is to say, it is perfectly competent for any person to say, "you have exceeded your power to make byelaws," although those byelaws may have been sanctioned by the Home Secretary. In my opinion when those byelaws are sanctioned by the Home Secretary they ought to have all the effect of law, and if the Home Secretary at present has not the means of so far investigating them as to give them that effect, some plan should be devised, I think, by which they shall have that effect when they have received his sanction.

3950. Have you any suggestion to offer either as to the power or as to the duties of local authorities?—That is of course a subject upon which every person who gives any thought to the subject must feel considerable difficulty, and it is almost impossible to give suggestions which only occur to the mind when you sit down to frame such a measure as may be required. I have read the evidence of the parliamentary counsel given before the Commission the other day, and I quite see the difficulty in giving such suggestions, because it is impossible to give suggestions unless they are practical, and such as are based upon a wide experience. I think that it is very desirable that there should be some general codification of the legislation which has taken place at various times on the difficult subject of local government. The difficulty, as it seems to me, is in preparing measures which would suit all cases, both large as well as small. Of course there is a decided advantage, one that I have already mentioned, in having a local Act of Parliament; and in a place like Liverpool or Manchester, or Birmingham or Oldham, and other large towns, there is always some pressing necessity arising which will bring them to Parliament, and even if you frame the best general measure, a measure applicable to those large towns will not be applicable, in my opinion, to small towns and rural villages. The idea which struck me was that there should be one general Act of Parliament, which would be capable of being divided and applied to different places, or that there should be several Acts of Parliament applicable to different places. Practically I do not think there would be much difficulty in framing one general measure, the whole of which, we will say, should be applicable to large towns, which might very well be described specifically, I think, in the schedule to such an Act of Parliament, and it might also be made to apply to places now having local boards, and now having charters of incorporation, and now being governed by a council. It might be made also to apply to all places having a large number of inhabitants, and if the Act were divided into parts it might also be made to apply as to given parts of it, leaving the inhabitants of any defined area at liberty, as now, to adopt it as they do under the provisions of the Local Government Act, but there should also be one part certainly which should apply to all places, great and small, and these would be some class of provisions with reference strictly to sanitary matters.

3951. Do you find any difficulty with regard to the outlying districts of Oldham?—Yes, there is some difficulty, and I should certainly suggest that if any general measure were framed, such as I have briefly given an outline of, provisions should be made for, say, such places as Oldham, taking in the outlying districts. Oldham has entirely outgrown itself on the west side of the town, and has extended into the adjoining township of Chadderton, where there is no local government that is worth being called such. There is a board of surveyors framed under the old Highway Act, but they really have no power of exercising any sanitary arrangements or of doing that which they ought to be compelled to do. Whilst I have been in London I see that this adjoining township of Chadderton, from some circumstances which have transpired, have had public meetings during the past week for the purpose of considering the propriety of adopting the Local Government Act, but for some time we have certainly experienced very great inconvenience from the fact that Chadderton, which has been comparatively a more thriving place perhaps than Oldham, is still neglecting all sanitary arrangements. Of course the effect of that is, that whatever we do in Oldham in the way of perfecting the sanitary arrangements, or in the way of a large expenditure of money, we are liable at all events to be invaded by disease which may spread from this neglected township of Chadderton that we cannot prevent, and I therefore think that greater facilities ought to be given (in fact I

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know of none at present) for taking in those outlying districts. There would be no difficulty in establishing some appellate jurisdiction which should control the thing in some satisfactory way, but I certainly think that with regard to a place like Chadderton, adjacent to Oldham, it should not be allowed to remain in the neglected condition in which it now is, and that must apply of course to every large town where it overgrows itself.

3952. (*Mr. Hibbert.*) With respect to Chadderton, what is the population of that township?—The township of Chadderton had a population in 1861 of 7,482; and, in order to show the increase, I believe the estimated population last year was 9,500, which is almost an unparalleled increase.

3953. This township of Chadderton, with a population now of 9,000 persons, is merely under a board of surveyors, established under the Highway Act of William the Fourth; do you know whether that body has any power to make sewers?—None, I believe.

3954. Is it not the case that the land in Chadderton lies below the township of Oldham?—Much below.

3955. Therefore, whatever sewers you take to the boundary of your borough, there is no power now to compel the township of Chadderton to carry on the sewage which you deliver?—I know of none.

3956. Do you know if any difficulties arise from that?—I believe serious difficulties arise from it. I am not prepared to speak confidently, but I rather think that at present we should not be able to carry the sewerage of the township of Oldham in that direction for want of an outlet.

3957. Is it your opinion that townships or parishes of large population should have the powers of the Local Government Act compulsorily imposed upon them?—To some extent certainly.

3958. And that they should not be entirely left for adoption as they are under the present law?—Certainly not.

3959. Can you state whether there are any special powers in the Oldham Local Act which were not in the general Acts, or which are not now known under the general law?—No, I could not now point out anything in our Act of Parliament which is not provided for in some form or another by the general law, at least in principle.

3960. You are of opinion, are you not, that with respect to byelaws there would be both advantages and disadvantages in placing them in any general Act of Parliament?—Yes; I think that there are advantages in favour of being at liberty to make byelaws, and I think that there are advantages in having the bye-laws in an Act of Parliament.

3961. In carrying out your views, after being certified by the Secretary of State, might not they be placed upon the table of the House of Parliament for a certain time, and after the expiration of that time have the force of law?—Yes, that would be a very good suggestion, I think. There should be some means adopted of making them public.

3962. Are you aware that that is so with reference to the general orders that are made by the Poor Law Board?—Yes, but I really do not see that there is much objection to the present plan, because before any byelaws are sanctioned by the Home Secretary, I believe that notice has to be published, and that a copy of the byelaws has to lie for inspection for something like a month or two months before they can even be transmitted to the Home Secretary for approval, so that every person has ample opportunity for inspecting the byelaws and offering any suggestions or remonstrances to the Home Secretary on the subject before he gives them his assent.

3963. Then there is sufficient power, you think, for the inhabitants, if they think proper to oppose byelaws, to do so before they are certified by the Home Secretary?—I am disposed to think so; but, of course, in byelaws it will happen, as in Acts of Parliament, that you cannot possibly see how a measure will operate or how far it will be defective until it is put into practical working operation.

3964. That in your opinion is the advantage of the present system over the placing of byelaws in any general Act of Parliament?—That is one of the advantages.

3965. Can you state what is the rateable value of the township of Oldham, that is to say, of the municipal borough?—It is about 292,000*l.* I believe that now it is pretty nearly 300,000*l.*

3966. What is the total amount of the rates levied by the council during the past year?—2*s.* 6*d.* in the pound; and I may say with regard to the rating powers that the provisions of our Act of 1865 are entirely different in respect to the powers of rating from any other that I know of, that is to say, we levy for all purposes within the borough one rate. So that we really do collect directly now the whole amount required for municipal purposes by the officers of the corporation, and the only other rate which is collected in the township is the poor rate, which is now more correctly and more exclusively applied to the purposes which its name implies. It is now the case in many boroughs, as it used formerly to be in Oldham, that the watch rate, for instance, is collected by the overseers in the poor rate, and is levied by the corporation by a precept issued to the overseers, and the same with regard to the baths and washhouses rate, and the same with regard to the borough rate.

3967. What are the purposes for which this 2*s.* 6*d.* rate is levied?—This 2*s.* 6*d.* includes all purposes; for the repair of highways, scavenging, the removal of nightsoil, the maintenance of the park, the sewage, and the cemeteries (which, by the way, was also levied before from the overseers), the payment of all current expenses and so on, such as keeping the town hall, and paying the collectors and all other servants; it includes everything in fact. I may say also that it is in contemplation now that the rate next year, instead of being 2*s.* 6*d.* will be 2*s.* I believe that, with regard to the question of rating, if some better facilities were given with regard to borrowing money for some purposes, which can now only be done very slowly out of the rates, that is to say, if some facilities could be given for raising money for works of a permanent character, such as sewers for instance, it would be a decided advantage, and would offer inducements for sanitary works often to be executed which are now neglectedor rendered incomplete and imperfect.

3968. Do you mean that you should have power to borrow money upon the plan adopted in the Manufacturing Districts Loan Act?—Yes. To give an illustration of what I mean, it might be that Oldham, which has only power to raise money for the purposes of sewering by the rates, might spend 10,000*l.* or 15,000*l.* or 20,000*l.* upon a work which in itself would be rendered of very much more value by the expenditure of a few thousand pounds more, but still the rate might be at such an amount that the ratepayers would not submit to any further expenditure of money, but if it could be repaid by instalments extending, as I submit it ought to extend, over a very considerable number of years, for a permanent work of that sort the money that had been previously expended would be rendered more valuable.

3969. Do you mean that if you had the power to do so, you would require more money than you have already borrowed under the Public Works Manufacturing Districts Act?—I do not know that we should, because now we are in a very advanced state with our works.

3970. I understand you to mean this, that owing to the advantages offered by that Public Works Loan Act, more money was spent for sanitary purposes than would have been spent if that power had not existed?—We could not have expended it out of the rates; it would have been impossible. And taking the case of a small village, which requires to spend 1,000*l.* or 1,500*l.* at once in the construction of a sewer, it is impossible that they can raise the money all at once, and they ought to have 20 or 30, or even 60 years to repay that money.

3971. Have they not power now to borrow money?—I am not familiar with their means of raising money. I am speaking now of the principle which applies as well to a large town as to a small village, with reference to valuable permanent works.

3972. Does your local Act contain any powers for borrowing?—Yes, we have powers for borrowing money for specific purposes, for gas and water, and for new streets and the improvement of existing streets, but we have no power of borrowing money except the specific powers given to us for specific purposes by the Act of Parliament.

3973. What amount have you borrowed for the purposes of a water supply?—160,000*l.* has been expended in the extension of the water supply; the old waterworks were purchased with the gasworks in 1853 for 10,000 perpetual annuities of 1*l.* per year each.

3974. What is the state of the water supply in the borough of Oldham?—The state of the water supply, I am sorry to say, is anything but what it should be, I mean in the sense that it is only barely adequate to the requirements of the place. In other respects it is very satisfactory, the water is very good and very wholesome, I believe; I regret to say that we were in Parliament this session for a further supply, which we unfortunately lost. I believe the application will be renewed next session; in fact it is impossible that we can go on as we are now. Last year, in consequence of the severe drought, I believe that for about two or three months the supply was only about two hours per day, and that confined to districts in the town, and from the peculiar conformation of the town many parts of it were left entirely without water the whole of the time in consequence of the water being unable to reach the elevation.

3975. Are you aware whether the short supply of water affected in any way the health of the district?—I am disposed to think that it did. I believe that in consequence of the scarcity of water at that time, and in consequence of the plan which they have in Oldham, which is, I think, on the whole a very objectionable one, of allowing a watercloset to each dwelling house, it had a very injurious effect on the state of the health of the town. In a dry season, when there is a scarcity of water for domestic purposes, the sewers and drains are all liable under such circumstances to become very injurious to health, and I believe that was the case in Oldham.

3976. Are the houses generally supplied with waterclosets or with privies?—Both. I believe that since we were placed under the obligation of giving a supply of water for one watercloset in each dwelling house, which commenced in 1855, there have been something like 1,000 waterclosets put up in the borough; in other respects they are principally ashpits and privies.

3977. You have told us about certain cesspools being out of repair; what did you mean by that?—We have not many of them; we have very few cesspools.

3978. Where does the sewage ultimately go to, which, you say, passes into certain streams?—I believe that it will all pass into the Mersey.

3979. Where do those streams generally flow into?—We have two streams, and I think they both flow into the Irwell, and thence on into the Mersey.

3980. Has there been any complaint at any time about the offensiveness of the streams?—No; I do not think that with regard to the streams there has been any complaint.

3981. Is it not the fact that those small streams flow into the Medlock?—Yes; and the Medlock flows into the Irwell.

3982. Have the council had any idea of getting rid of their sewage in any other way; have they had any proposal before them?—There has been no definite proposal before the council with a view to the utilization in any way of the sewage. I may say that Oldham, like many other towns, has recently been visited by the Rivers Pollution Commission, who submitted certain queries on the subject, and I can put in, if the Commission wish it, the answers to those queries.

3983. Will you put them in?—Yes.

[*The witness delivered in the same.*]

3984. Do the guardians in any way interfere in the borough with respect to nuisances?—No.

3985. Who appoints the inspector of nuisances?—The council.

3986. Supposing that the powers under the Diseases Prevention Act were called into operation, would not the guardians have the power to interfere in those cases?—I believe that under the Diseases Prevention Act some powers and duties are vested in and imposed upon the guardians.

3987. Would you think it desirable that all such powers in the case of municipal boroughs should be transferred to the same authority that has the other sanitary powers?—I see no reason why the council should not exercise all the duties of the guardians under the Diseases Prevention Act in a place like Oldham, excepting, it might be, the one of finance, and I do not see even that that would affect the question in any way. I am very much disposed to think that it would be very inconvenient that there should be any conflict whatever of jurisdiction in a town between the guardians and the municipal authorities.

3988. Do you know whether the guardians have ever exercised their powers with respect to nuisances in the other townships?—I believe not. If they have it would be in some very isolated case, but I should say that in all those townships the guardians take no steps whatever with regard to nuisances.

3989. Do you know whether in the township of Chadderton there has been any nuisance inspector at all?—I believe they professedly have a nuisance inspector there, but I should very much question whether he does efficiently discharge the duties, or at all events answer any good purpose.

3990. You stated that you thought there might be one general Act applicable to all places, but divided into separate parts, so that one part might have general powers applicable to all places, another part might be applicable to large towns, and another part to rural districts; is that the opinion which you intended to express?—I am disposed to think that a general comprehensive Act might be framed which would be operative in places of importance, which to a large extent, as I before stated, might be specifically enumerated in a schedule, including, for instance, all present and future municipal boroughs and the existing local boards, with a provision for extending the area of such places as embrace outlying districts to towns extended beyond their own bounds, such as Oldham, and to places within defined boundaries, having more than a certain number of inhabitants. It would be a large and comprehensive measure which should apply to those places. I think that there would be no difficulty in framing it in parts, so that certain parts of it, or in fact all parts of it, might or might not be adopted by a district having some defined boundary; but I think that there should be one or two parts of that general Act which should operate in every township, making some provision for constituting an authority for carrying out the provisions so applicable.

3991. What do you consider would be the best authority in rural districts?—In small districts of course the question is one of expense; and if you have a new piece of machinery for a very little amount of working the expense is disproportionate apparently to the ratepayers and disproportioned to the objects to be attained. I do not see why the guardians in small townships should not be the authority for carrying out sanitary regulations.

3992. With respect to the Oldham union you mentioned that there are five townships; one is the municipal borough, two of them are under the Local Government Act, and two of them have no local government. Would you in such a case as that think that the board of the whole union should be the

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authority for sanitary purposes in places like the two townships which have no local government?—I really see no objection to that course. It would be much better, I admit, that each township like those should have its own separate body for local government purposes, but when you come to places of less importance than those, I should see no objection to the board of guardians, as an entire body, having the control of all the townships in the union. Of course you must draw the line somewhere, and my reason for proposing the guardians is that you have a piece of machinery already in operation, which, if it does not now, ought to be made to work very well. I ought to have mentioned, I think, in speaking especially of taking in outlying districts, that on the south-east side of Oldham a place which is not within the Oldham union, called Lees, has just lately, in consequence of its contiguity to Oldham, been included within the limits of the parliamentary borough. That is another place certainly which ought to be, in my opinion, included within the limits of the municipal borough, for the same reason that it was included within the limits of the parliamentary borough. There is nothing whatever upon the ground to distinguish to the naked eye any division between Oldham and Lees on the south-east side of Oldham and Chadderton on the west side.

3993. What is the population of Lees?—Lees also to a certain extent, but a very limited area, I believe, is a local board district. The population of Lees according to the census of 1861 was 7,310. I do not suppose there has been any very great increase in Lees since that time. I do not know exactly what the area of the local board district is, but probably it would be somewhere about 1,000 acres.

3994. Is there an objection on the part of those outlying townships to be united to Oldham on account of the large amount of rates which are levied in the municipal borough?—No doubt that would have its weight; they would apprehend the increased rate which they would have to pay, but I really do not see very much injustice in their contributing the same rate that the Oldham people contribute, seeing that they enjoy all the advantages of our good streets and our good sewers and good drains.

3995. (*Lieutenant-Colonel Ewart.*) Would you propose to rate a district taken in in that way in respect to money which had been borrowed previous to the time of annexation, or would you not rate it separately?—That is a matter which would require some consideration, but I should certainly think on the spur of the moment that they would be entitled to some exemptions in respect to past expenditure; but you must bear in mind that there are benefits as well as liabilities. I may say that now the ratepayers of Oldham get the benefit of some thousands of pounds profit every year from their gas and water works, which goes in aid of the rate.

3996. Might you not rate them in respect to those works by which they benefit, but not in respect to works for which you borrowed money by which they would not benefit?—I apprehend that there would not be the least difficulty in having a separate district rate for each separate district included within the limits of the municipal borough.

3997. Do not you think that some arrangement of that kind would facilitate annexation?—Most likely.

3998. Supposing that the guardians were a local authority for a rural district, would you rate by parishes or would you throw the rate over the union?—There is a very great advantage in having an extended area of rating, and I should be disposed to think that the rating of the whole union would be the preferable plan.

3999. But would not that throw upon some parishes a large share of expenditure with respect to other parishes which required more works done?—No, I take it not. The contribution would of course be in proportion to the rateable value of the property in the township; and, looking at it from that pounds, shillings, and pence point of view, I should think that probably the expenditure would be pretty well proportioned throughout the whole of the townships in the union.

4000. Supposing you had a general Act of Parliament, such as you have spoken of, what would be your opinion as to dealing with local details affecting special places by a system of byelaws?—I apprehend that you could not do that. Byelaws would only relate to matters in relation to buildings, and more especially the construction of buildings, the space about buildings, ventilation, and things of that kind, and I am afraid that you could not make the system of making byelaws applicable to all subjects.

4001. But that each place should make its own byelaws subject to approval by the central authority?—Very small places, I conceive, would not require byelaws. My idea is that the compulsory application to those small places should relate only to strictly sanitary measures, although it would be a great advantage in any town, where it is at all likely to be embraced or to form itself at some future time a large town, that its buildings should be under some regulations as to the mode in which they are constructed, and the manner in which streets are laid out. I see great difficulty to begin with on account of the expense. We experience now in a place like Oldham very great difficulty in making improvements, which can only be done at very considerable cost, in consequence of the very objectionable way in which the property has been laid out in years gone by, and that is the case in every place of minor importance; and I am very much afraid that no measure can be applied which will effectually prevent such things happening in future.

4002. With respect to borrowing money for public works, you recommended that the repayment should be thrown over a considerable number of years; do not you think that the time should vary with reference to the nature of the works, that is to say, whether they are for sewage, or for waterworks, or for pavement?—Decidedly. There would be no comparison between a sewer and the paved surface of a roadway, because the paved surface of a roadway would wear out in a very short time, perhaps, depending upon circumstances, from 10 to 20 years; but a properly constructed sewer would probably last for hundreds of years, so that there is no comparison between paving a street and a sewer or waterworks. There is only the first cost in waterworks, and when they are made there is very little annual expenditure, and they will last, as a rule, for all time; so that with regard to waterworks and sewers and other permanent works which would not require renewing in a short time, I think that a lengthened period for repayment of the money should be given.

4003. Is any drinking water taken from the streams into which the sewage now flows?—I think no person would attempt to drink the water which flows down our streams below our reservoirs; it is too much polluted for that. The water in the streams in the vicinity of Oldham is totally unfit for all domestic purposes.

4004. Is it taken by any towns or villages lower down?—Certainly not.

4005. What is your source of water supply; is it from a river?—It is collected from a large area lying above the town, some of it being on the borders of Yorkshire, and the other is one of the tributaries of the river Roach, above Rochdale.

4006. Have you many outfalls for the drainage?—I cannot give you the exact number, but we should have, of course, only two or three main outfalls into those streams, most of the side street sewers running into the main drain through the main streets, but all the sewage would find its way eventually to two or three outlets.

4007. Do you apprehend that there would be any difficulty in finding land for irrigating with sewage?—I think there would be a very great deal of difficulty in finding land for irrigation purposes in places

such as Oldham, Manchester, Salford, and other large towns.

4008. Could you not find it by going some distance?—That, of course, would increase very much the expense. It might be found, but I very much fear that we should be looked upon as coming to commit some very great nuisance. I do not think it is very inviting to any person; it does not appear inviting to the public, but I do not myself entertain any feeling on the subject, but I think, generally speaking, it is looked upon with some disfavour, and that we should have to go a very long distance before we could secure the land at anything like a reasonable cost. I am disposed to think that if some experiments on the sewage of towns could be made, with the view of converting the sewage into the most portable and fertilizing form possible, that would be perhaps preferable to irrigation. I do not profess to understand the subject thoroughly, and of course I speak with some degree of hesitation.

4009. Might you not have an intercepting sewer or sewers, to receive the drainage from those outfalls which now goes into the river and take it down to ground to be obtained for the purpose?—You might do that very conveniently, I have no doubt, in some districts and in some towns, but Lancashire especially is so densely populated that I cannot for the moment recall any place where we could take our sewage to use it for irrigating purposes. I may say that, in one instance, a year or two ago, when we were constructing a large main sewer extending for a mile and a half on the outskirts of the town, we were threatened with legal proceedings from some works below, which supposed that the water used at those works would be very much polluted by our sewer; and, with a view to protecting ourselves, we did take something like 16 acres of land, I think, at the outlet of the sewer, with the special object in view of protecting ourselves in case proceedings should be taken against us, and, of course, also with the secondary object of making the experiment on the land by irrigating it with sewage. However, no proceedings have been taken, and none I think are likely to be taken; and the amount of sewage is so infinitesimal, compared with the water that comes down in the polluted condition in which we find it, that probably it may be many years before anything is done with regard to that.

4010. (*Mr. Bircham.*) Does the water in the river come down to you in a foul condition?—Some of it from the township of Lees, but the river takes its rise in Oldham. It leaves our waterworks in Oldham and flows through the township of Lees, where it does receive some additional pollution before it comes to us.

4011. From the sewage of a town population immediately in contact with you?—Yes, exactly, from manufactures of different kinds.

4012. How far do you go for your water supply?—Our old works, which were constructed in 1827 or 1828, are on the confines of the borough, and at its junction with Yorkshire it would be about two miles away perhaps. Our new waterworks, constructed under an Act obtained in 1855, are seven miles away from Oldham.

4013. Is the water supply obtained at considerable expense?—At very considerable expense.

4014. Does not it strike you that, taking the water pure and making it foul, you ought to incur, and that towns generally ought to be content to incur, some considerable expense rather than pollute a stream which is flowing from them?—Yes; I have no doubt that all towns would submit cheerfully to some expense. Indeed all large towns do incur very considerable expense, but I do not think it is entirely a question of expense. I think the thing is beset with greater difficulty than that of expense, but of course expense would overcome most difficulties.

4015. But the pollution of the river is certain by turning sewage into it?—Yes; but that is not the only pollution. There is pollution by the works, and there is pollution by the solids which will inevitably get thrown into the stream in a manufacturing town unless it is covered over, or under the charge of the local authorities. In the case of Oldham we have no control that I am aware of over the stream, and it is used for all purposes by all persons.

4016. You mean to convey that if your immediate pollution of it were not permitted, it would still be polluted from the want of a conservancy, or protection by other means?—Unquestionably.

4017. Have you any experience of any large delivery of sewage from a town population upon land for the purposes of irrigation or of being submitted to any other disinfecting process?—I have no experience whatever on that subject.

4018. You were asked some questions about bye-laws. I think I gathered the result to be this, that if a byelaw were made to have the force of an Act of Parliament it would be too inflexible, and that the inconvenience which results from its lessened authority on account of its liability to impeachment as *ultra vires* was a less mischief?—Yes, I think so.

4019. Did I rightly understand your opinion to be, that in rural districts it would be better that parishes should be grouped into some such districts as the poor law unions for the purposes of health?—I merely suggested that because I suppose that no township is without one or two guardians, and that there is no township but what is in some poor law union, and that suggested itself to my mind as being already a piece of machinery which might be turned to account without entailing any very serious expense, or without involving the trouble of different elections, which are always inconvenient. I think in a small place everything should be done that is possible to vest the authority in one body.

4020. But there are also highway districts obtaining throughout the country; does not it occur to you as desirable that the sewers and the highways should be in one hand, speaking more particularly of rural districts?—I quite understand what you mean. I am not so familiar with the *modus operandi* of highway districts and their proceedings as to be able quite to say, but of course any machinery which was existing in a district would meet my object. I merely mentioned the guardians as an illustration of what I meant.

4021. But structural works, wherever they were executed, would mainly be put upon the highways, would they not?—Yes.

4022. Would not it be desirable that as where the Local Government Act applies the highways and the sewers are in the same hand, they should also be so in rural districts?—I think it would be an advantage decidedly that where there is a highway board having the control and charge and management of the highways, if the sewers are to be made under that highway they should be the body to make them.

4023. Would not it be a more just incidence of the expense incurred in parishes in unions that a separate expenditure in a given parish should fall upon that parish as it does in the case of highway districts?—I do not know how the highway rate is levied, but I know that now many of the charges of a poor law union are paid out of the common fund which is made up by contributions from the townships in the union according to their rateable value, and that on the whole seems to me a very just principle.

4024. Although a given structural expense may be incurred entirely in one parish which would be of little service or none to the other parishes in the union?—If such a thing could happen that of course would be one of the objections to the plan which I have suggested, but I conceive that in every township in a union its wants would be pretty nearly proportioned to the wants and requirements of every other township, and that therefore practically no serious injustice could be done by their contributing to a common fund.

4025. You say, if I understand you aright, that certain cardinal regulations for the purposes of health should be binding everywhere?—I think so.

4026. And that, as the populations increased, you would propose a larger application of legislation to them by the code which you suggest?—Yes.

4027. Would you give those rural districts the power of making byelaws as to buildings and other matters of detail?—I see a great many advantages in favour of that, but I still, notwithstanding that, fear that there might be a very great hardship upon a rural district in imposing conditions upon them which are only applicable to a large town.

4028. Have you had any experience of buildings in rural districts not well fitted for human habitation?—No, I have not, but I can well conceive that every dwelling house in a rural district ought to be provided with proper sanitary arrangements, such as a proper privy, and a proper supply of water, and proper drainage.

4029. And that either by direct legislation or by byelaw provision should be made to that effect?—Yes; there should be no alternative given in any place, I think, with regard to those matters.

4030. Have you any experience of the action of nuisance inspectors in rural districts, whether they do their duty satisfactorily or not?—From the little experience that I have had I should think it is very much neglected.

4031. Does it appear to you that their duties would be better performed if they were a more independent class of men, and less under the control of the local authority which appoints them?—I should certainly think so.

4032. (*Mr. Powell.*) In one of your earlier answers you stated, as I understood you, that the overseers and guardians of course have their own independent jurisdiction. I presume that in that answer you referred to their authority under the Poor Law Acts?—Yes, exactly so; I referred to the administration of the poor laws.

4033. What did you state was the authority at Chadderton?—A highway board under the old Highway Act.

4034. Of course in that township the Nuisances Removal Acts and the Sewage Utilization Acts prevail?—Of course they have operation there, but they are virtually obsolete, and I should think not only there, but in many other places.

4035. They exist in letter, so to say, but not in actual law as enforced?—Precisely.

4036. What is the nature of the authority of the police commissioners at Middleton?—Very similar to the power conferred by the public Acts and the consolidation Acts under the local Act of Parliament.

4037. What is the date of their Act?—Speaking from memory, I should think within the last 10 years.

4038. Will you explain the local authority in the hamlet of Lees?—A local board.

4039. Have they adopted the working of the Public Health and the Local Government Acts?—I believe they have.

4040. Can you explain why, seeing that this variety of jurisdiction within the borough must be extremely inconvenient, and you have given us illustrations of that inconvenience, the same power was not given over the whole of the borough by the Act of 1865, that being a golden opportunity for such a reform?—I am afraid we should have embarked at that time upon a business in which we should not have succeeded; I think that we should have met with very strong opposition from Lees, and also from Chadderton, if we had sought to include those places within our municipal limits. What I wish to impress upon the Commission is that, notwithstanding opposition under some circumstances, those outlying districts should be compelled to come in.

4041. Then in short you did not attempt to bring them then within the operation of the Act of 1865, because you feared that there would be such opposition as would have defeated such a bill?—I am sure that that would have been the effect if it had been attempted. At the same time, I must say that the subject was never, so far as I am aware, contemplated. It is often a subject which is alluded to, but no practical steps whatever have been taken for the purpose of embracing them within the limits of the municipal borough.

4042. But if such a bill were now before the House it is probable, is it not, that in the improved state of public opinion an effort would be made to embrace the whole borough within one local Act?—I should think that the time will arrive, referring to Lees and Chadderton only, not to the other townships in the union, but referring to Lees and Chadderton I should think that an attempt at some time will be made to include those places.

4043. Would they be consenting parties do you think?—I do not think that they would at present.

4044. It would mainly, would it not, depend upon the arrangements made with reference to their liability to the rates?—It would mainly depend upon that I think.

4045. Could you summarize, without going into minute detail, what powers there are in your local Act which are not to be found in the general Acts?—I really do not think that there are any powers in our local Act, excepting those specially perhaps relating to strictly local matters, that are not to be found in the general Acts of Parliament. I believe that on the whole every clause in our Act has been taken from the general Acts of Parliament. Some few may have been taken from other local Acts of Parliament, but I do not think that it is more than a codification of the existing laws that might be found on the general statute book.

4046. Can you state what exceptional circumstance exists in the borough of Oldham which renders it necessary or desirable for the good government of the town that it should have any powers which are not possessed by towns in a manufacturing district of a like character?—No; probably Oldham itself is free from anything very exceptional. But of course, in a seaport town like Liverpool or a large town like Manchester, I conceive that there might be in those places provisions required that would not be with us. But I think that there is very little that is exceptional required in a place like Oldham. What is required for the protection of the people we have already got.

4047. A few days before the passing of your local Act the Sewage Utilization Act of 1865 became law, and there have subsequently been the Sanitary Act of 1866, the Sanitary Act of 1868, and the Sewage Utilization Act of 1857. Do you consider that those statutes have become in Oldham a dead letter in their action, or are they acted upon?—I do not think that they are a dead letter, but I do not know yet of a single instance in which we have required to take any proceedings under those Acts of Parliament. I am not quite sure, but I believe that once we were threatened with the 49th section, which gives the Home Secretary power to compel the local authority to execute certain works. That was in the case of the sewer that I referred to a short time ago, in which we were threatened with legal proceedings if we made it. There was no indisposition on the part of the corporation, at the time that threat was made, to execute the work. The thing was beset with many difficulties, which it is difficult to explain; indeed, I do not remember them just now, but there was certainly no indisposition on the part of the corporation to execute any necessary works; and that was the only instance that I remember in which we had occasion to refer specially to those Acts of Parliament. Another circumstance in connexion with those Acts, and in connexion also with that sewer, I do recall, and that was with regard to closing pumps and wells. I know that when complaint was made to the Home Secretary about the requirements of this sewer it was contended on the part of the corporation that the state of the district through which it was proposed to carry the sewer was not entirely attributable to the want of drainage, but was attributable in a great measure to the defective water supply.

The water supplied by the corporation in that district was used to a very limited extent indeed, and, for the purpose of satisfying the Home Secretary that all the blame was not to be attached to us, we went to the expense at that time of having an analysis made of the whole of the wells and pump waters that were used in the district, and many of them were found extremely defective, in fact very injurious. At time I referred to the Sanitary Acts, and, according to my recollection of my construction of the Act of Parliament, there was no power whatever to close those wells and pumps. I consider that that is a defect which should be remedied as early as possible. It is very important that provision should be made for closing wells and pumps.

4048. But the more recent Acts, although you neglect them, are really law?—Unquestionably.

4049. Do you think any complication or contradiction is found on comparing your local Act with those more recent statutes, or any want of harmony or adaptability in the language?—I do not remember that there is. I can conceive that under some circumstances I should proceed under the Sanitary Act of 1866, and I probably might succeed better in getting convictions for some things under that Act than under our own. Take, for instance, the black smoke, which is a subject which I am quite satisfied ought to be dealt with in a place like Oldham and many other large towns in Lancashire, but virtually, I am sorry to say, that the Act of Parliament does in that respect remain a dead letter. It may be that in every important town the council is more or less directly or indirectly interested in sending out black smoke, and you find a difficulty of course in putting in operation the Act of Parliament.

4050. Is public opinion becoming alive to the mischief of the smoke nuisance?—Yes, I am quite sure that the opinion of Oldham is growing very much in favour of the consumption of smoke.

4051. Have town councillors, when on their canvass and addressing their intended constituents, promised what great things they would do to remove the smoke nuisance?—No, I do not think that at present the smoke nuisance has become a matter of that importance in Oldham which I believe it will by-and-by.

4052. You say that in some portions of your borough you have a local Act containing regulations as to buildings, and that in other districts there are no such restrictions; is it found that buildings of a bad character are arising in those districts where there are no restrictions?—I cannot give a more striking illustration that that is so than to refer Chadderton, where you have only to step over an imaginary line and find that houses are springing up in great numbers, back to back, without any proper sanitary regulations for the comfort or the safety of the inhabitants.

4053. Any power like that conferred by the Nuisances Removal Act would in a greater or less degree alleviate mischief of that kind in such a district; do you find those Acts in any case put in force?—Not in the slightest degree I should say; I do not know what particular law you refer to, but I should say not in the slightest degree.

4054. I refer to the power for the removal of nuisances and the connexion of house drains with the sewer?—Yes, but in the case of the erection of a new house or a row of new houses in Chadderton, which may for a time appear to be in the country, and which are inviting to persons employed in large mills during the whole of the day, they are inhabited by tenants at once before they are well dry, and to all appearance there is no nuisance about them.

4055. With regard to the 4th section of the Sanitary Act of 1868, which provides that every new house and every house pulled down to or below the ground floor and rebuilt is to have a sufficient water-closet or privy and ashpit, and which also provides that the local authority shall see that the drains, waterclosets, privies, and ashpits within their district shall not become a nuisance, has that section been a dead letter in the district of Chadderton?—I do not at the moment think that this Act of Parliament is at all observed in the place I refer to, but the powers of that particular section might, with some saving, be generally complied with. I do not refer so much to the want of privy accommodation in connexion with this new property as to the mode in which the houses are constructed, back to back houses, for instance, which involve many seriously objectionable things.

4056. The streets are probably extremely narrow in that district?—Yes, I was going to observe that of course in the erection of a street of houses back to back, to say the least of it, in the emptying of the ashpits and privies the local authority would be put to very much more expense than they would be if there was a proper distance between the houses, or even an entry for a wheelbarrow. I know that we have in our own large town many instances in which at the dead of night the whole of the night soil has to be carried through the apartments of the inmates. That of course arises in houses which formerly formed a small village, which has now grown into a town of upwards of 80,000 inhabitants.

4057. Have you privies and ashpits all over the town?—Yes, and waterclosets also.

4058. But probably privies and ashpits are more ordinarily used?—They are more ordinarily used, and they are the least objectionable, I think.

4059. How often does the local authority clear out the privies and ashpits?—It is the business of the occupier to give notice when they require cleaning out, and of course it is at once done. It does not cost the occupier anything, so that there is a strong inducement to him to give notice as soon as ever it is required. At the same time we have an inspection going on as well, but as soon as the notice is given it is attended to.

4060. Does not it seem to you much more convenient that the local authority should attend to matters of that kind at regular intervals instead of giving a working man, whose time is valuable, the trouble of sending a special notice?—I do not think that practically with us it makes any difference; I believe that every place is well attended to.

4061. Perhaps the local authority does move at its own instance and does not wait for a notice?—It certainly would do so if notice were not given; it could not go on for very many days.

4062. You state that the stream in Oldham actually takes its rise in the town, and consequently it must be extremely small?—We have our waterworks upon the stream first, before it becomes polluted. It does not take its rise quite in the town, the reservoirs would be two miles away from the heart of the town.

4063. Could you state in general terms the breadth or the depth of this stream?—It is a very narrow stream, not wider than the length of this table before me [5 feet], and very shallow, probably to day there would not be more than a few gallons of water per minute going down it.

4064. As your evidence now stands, I do not think you have explained to the Commission in any way how the sewerage matter departs from Oldham; it would appear at present that there must be a considerable accumulation?—All the sewage which finds its way into the drains of course passes away by the river, all the night soil is at once taken to a depôt in carts constructed for the purpose, and, as far as possible, is kept in the privies separate from the ashes, and is taken away to a depôt and transmitted by waggons also constructed for the purpose by rail into the country, and there sold for agricultural purposes.

4065. But by the term river you mean a small stream?—Yes.

4066. I am afraid that the water carriage for your sewage, the river being so small, is of the smallest character, and does not really carry away the sewage?—The water of course going into the river from the sewers increases in the river very considerably the water supply, and of course helps to remove many

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other nuisances which get into the river in other ways.

4067. But practically is there in this river or stream an accumulation of sewage matter?—I should think there is, and it sometimes is very offensive; in many places it is very offensive from the practice of the water being impounded by the owners of mills for condensing purposes; even the foul water is taken from the stream and used for condensing purposes times and times over again till it is almost boiling, and it is then sent down the river in that state, and it is that which causes more of the offensive effluvia than the actual flow from the sewers.

4068. Is the stream which you describe arched over in any part or the whole of it in the town?—Nearly the whole of it is arched over through the town, and it has been arched over at different times by the different owners on the banks of the stream as the property has been built upon, and some part of it has been made by the corporation as the public sewer through the main street.

4069. Are the owners compelled to bridge it over, or is it optional?—They are not compelled, they have done it for the purpose of making their land more available for building purposes.

4070. Are there any ventilating shafts or gully holes in this arched portion of the stream?—Only in such parts of it as have been made by the corporation.

4071. Are they shafts in those cases or merely holes?—Both; so far as we can secure the privilege we put in shafts.

4072. What kind of shafts?—Pipes running up the sides of the buildings, carried above the roofs of the houses. We have a difficulty in getting that permission in some cases, and that is, perhaps, a suggestion well worthy the consideration of the Commission as to whether facilities should not be granted to the local authorities to ventilate their sewers compulsorily, paying of course, if need be, compensation for any apparent injury that is done to the owner of the property affected.

4073. Are the rain pipes used as ventilating shafts?—They are.

4074. Are they used voluntarily or does the corporation enforce their use?—I do not think we have power to enforce their use.

4075. Do you encourage their use?—Yes, certainly.

4076. Are they trapped?—I do not think they are. And I think there is another very serious difficulty under which we and, I have no doubt, other local authorities labour, and that is this: Although we may have power to a certain extent to compel the connexion of house drainage with the sewers, the power does not extend to the proper trapping of all the drains in the houses. I believe that very serious mischief arises from that cause. I know that it has often been the subject of conversation between myself and others that that is so. And in a letter which I have referred to before this morning, I find that the same medical authority states that "the fever which "occurred in 1862 and 1863 was scarlet fever, and "that defective sanitary arrangements might favour "the diffusion of this disease, but would not generate "it." I know that this medical gentleman is of opinion that in many cases of fever which he has attended he, as a rule, traced their cause to defective trapping of the drains.

4077. Do those rain pipes open into the drain of the individual house or into the main sewer?—They would be connected with the main drain, I take it, where they were used for ventilating purposes.

4078. You stated that you have had occasion to modify the byelaws considerably: has that modification always been in one direction, namely, in favour of relaxation?—It has, I am sorry to say.

4079. Have you found much difficulty in enforcing byelaws from the resistance of individuals?—I could not say that we have, probably because resistance would be useless. We have only in one case, I think, been compelled to go to the quarter sessions in appeal, and the corporation were successful in that case.

4080. There is such a thing, you know, as passive resistance, which we hear of sometimes?—Yes, I believe there is a feeling in the minds of many persons to resist, but, practically, it does not come to anything.

4081. Have you ever considered whether, if the Home Secretary had the power of making byelaws with an authority equivalent to that of the legislature, he would practically be making laws rather than bye laws?—I take it that, where the Home Secretary had the power to do it, they would be framed not only consistent with the general law, but also coming within the scope of the power which would be given to him by this general Act of Parliament.

4082. If they were contradictory to the general law, and beyond the scope of the authority given to him, you would have some power to set him right and to annul the byelaw?—Yes. Of course, at present, the only way of the thing being set right is that the local authority becomes involved in litigation, which has not only a very deterring effect, but the expense is often very serious, and that may for a long time operate upon the minds of the local authority to deter them from constructing other works. It is of the utmost importance that whatever power may be given to the Home Secretary, when once he has exercised that power, it should not be liable to be impeached; it must have the effect of an Act of Parliament to be of real value.

4083. But still you admit that he must be set right if he has contradicted the law or gone beyond the law; how can that be done except by some process which is of the nature of litigation?—I think it might be done in this way: that if the appellate jurisdiction, if I may so term it, of the Home Secretary were continued, and if by appeal to him it should be shown that he had gone beyond the powers conferred upon him, then he might himself have the power to revoke the byelaw or to alter it.

4084. You mean an appeal from the Home Secretary to the Home Secretary?—Yes, certainly, I think that the Home Secretary practically would desire to keep within his powers and not to go beyond them; if he exceeded those powers it ought to be with perfect immunity to the local authority, but still with the power to the Home Secretary to set himself right.

4085. Then you would run the risk of the Home Secretary thinking he was right when he was really contradicting the law or going beyond the powers which the law has clothed him with?—Yes, subject to certain checks such as exist now. The bye-laws, before receiving the sanction of the Home Secretary, should obtain publicity and be open to inspection and criticism, and the Home Secretary should receive the assistance, as he always would do, of proper legal guidance.

4086. Then you would not allow the Court of Queen's Bench to act as a court of appeal practically from the Home Secretary?—I should see no objection to that. What I wish to impress upon the Commission is this: that if byelaws are framed and receive the sanction of the Home Secretary, so long as those byelaws are in existence the local authority should have perfect immunity in carrying them out until they are altered.

4087. But supposing that any individual thought that a byelaw was *ultra vires* or contradictory to the law, and felt strongly that he was wronged by the application of such a byelaw in his case, and that the Home Secretary adhered to this byelaw, and would not alter it or vary it, would you give such a person no remedy?—Yes; I think it would be very desirable in such a case that there should be a remedy, but I am not prepared to say what remedy should be given to him. It is very probable that an appeal to the Court of Queen's Bench might be given. What I require, if such an appeal is given, is that it should be in some simple form, and that it should not land the

authorities in endless and very expensive litigation. That is the object that I wish to attain.

4088. Your mind rather runs to the simplicity of the procedure than to an absolute abolition of the power of the Court of Queen's Bench?—I quite think it would be very hard upon any individual who entertained strong views that the Home Secretary had exceeded his power if there should be no means of putting him right.

4089. I find in your Act of 1865, a statement that 467,879*l.* have been actually borrowed, and there is power to borrow in addition 240,000*l.*, namely, 130,000*l.* for gas and water, and 110,000*l.* for streets and street improvements. What further borrowing power do you desire for such a town as Oldham?—In the 467,879*l.* referred to, the annuities capitalized at 25 years purchase are included. I think that, subject, it might be, to some inquiry first as to the propriety of expending the money and probably as to our ability to give security for the money, we should have further borrowing power for the execution of permanent works of improvement, especially with regard to sanitary matters.

4090. The words of the Act seem comprehensive, "streets and street improvements?"—Yes; but those are the "streets and street improvements" which are specifically mentioned in this Act of Parliament.

4091. Have you not the ordinary borrowing powers given by the general Act?—I am not aware of any borrowing powers that we have, except those that are given by this Act of Parliament.

4092. I suppose they are in this clause 315?—Yes.

4093. Could you more definitely explain the sanitary matters with regard to which there ought, in your opinion, to be wider borrowing powers?—I refer especially to sewers. I think that every local authority should have the power to borrow money for the purpose of effecting sanitary works.

4094. You desire to borrow under more favourable terms as regards the length of time for repayment; how long a time should you think would be convenient, having regard to the interests of posterity as well as the interests of the present generation?—I think that for waterworks 100 years is not too much.

4095. But it is possible, and every thoughtful man must bear in mind the possibility, that the waterworks may be wrong in their conception, and perhaps defective in execution?—Yes; but I think that that is a very remote suggestion. It is not likely to happen with regard to the present water supply that any substitute can be provided. We must have water, and I know of no means of more cheaply bringing it than by gravitation.

4096. As regards main drains, would you have a longer time for repayment?—I do not think that 50 years is at all too much for that.

4097. Was I not correct in understanding from you that a water bill proposed by the Oldham authorities has been rejected by Parliament during this session?—Yes, that is so.

4098. Can you explain the ground of that rejection?—Oldham is one of a large congregation, if I may so say, of large towns very closely connected together, large manufacturing towns, and the immediate sources of supply are very few, and consequently we met with very considerable opposition from the local authorities of other towns; and they had this to say in their favour, that we were proposing to abstract water from streams which did not naturally flow to the town of Oldham, but which did naturally flow to the towns which opposed us.

4099. Will you name those towns?—Ashton-under-Lyne, Staleybridge, Duckinfield, and Stockport.

4100. Did you propose to take your water from that great range of hills which is now the general gathering ground for those vast towns of Lancashire?—We did; we were driven there of necessity; we had no other means of supply.

4101. I am afraid that ere long some of those towns will be driven much further?—Most likely, but we all naturally go to the nearest places first.

4102. But the objection was that you were desirous of getting water from the gathering ground which already supplied those towns, and they did not think that the supplies so given to them were in excess of their wants?—Yes, that was generally the argument advanced against us.

4103. Have you the water supplied to each house or do you supply by stand pipes?—We have no stand pipes whatever; we supply the water to each house.

4104. Do you find any inconvenience owing to the houses becoming damp from the bursting of the pipes in them?—No.

4105. Have you a constant supply?—We have a constant supply Sunday and week day and all the 24 hours in the day, barring accidents of course.

4106. Have you found much waste from persons leaving their taps open?—Yes; there is a great deal of waste of water, if it can be considered a waste, if the term is applicable, but I hardly think that it is waste; it does good somewhere.

4107. It increases, does it not, the volume of the stream?—Yes, and it flushes the sewers, and so on.

4108. Have you any power of fining persons for wasting the water?—Yes; we do fine them frequently; we have an inspector constantly employed doing nothing else but going round to visit every place supplied with water to see that the taps are in good repair. And I suppose we have reported every fortnight a thousand cases of taps out of repair and wasting the water. It would not, of course, be wasting to any great extent, but still there would be a waste going on. I mention that to show the system of inspection that we have.

4109. Do you find that the working people are careless in the use of their taps and of the pipe within their houses so that they are wastefully decaying?—Yes; I dare say they are wasteful. It is a matter that does not demand very much attention from the working classes.

4110. My question referred not to the water but to the material of the pipes, &c.?—I do not think they pay much care or attention to them.

4111. You have mentioned 2*s.* 6*d.* as the amount of your local rates; is that your maximum?—We have no limit as to the amount that we may collect.

4112. You stated that you have adopted, very wisely, the sections of the Public Health and Local Government Acts enabling you to provide recreation grounds for your very numerous population; can you very shortly give us the extent of those grounds?—I believe that the whole of the land that we purchased for the purpose, and which I may say is very conveniently situated for the population, was about 72 acres. It cost us about 18,000*l.*, and I believe we spent something like 16,000*l.* more in laying it out as recreation and as ornamental grounds, the formation of playgrounds, gymnasiums, and the necessary buildings about the park. We spent in the whole about 34,000*l.*, it is all in one park. The conformation of Oldham is rather singular, and we could do very well with two other parks. It is a very long township, about four or five miles in length, but very narrow, being only about two miles in breadth, so that we could do with everything that we have in duplicate or even in triplicate.

4113. Are any steps being taken to provide other parks?—No.

4114. Is the matter under discussion?—Not in the least.

The witness withdrew.

T. Pain, Esq.

1 June 1869.

(26.) THOMAS PAIN, Esq., examined.

4115. (*Chairman.*) Are you clerk to the Local Board of Health of Banbury?—I am.

4116. When was that local board constituted?—In 1852, under the first Local Government Act of 1848.

4117. Will you describe the district of Banbury?—It comprises the corporate borough of Banbury and the non-corporate townships of Neithrop in the county of Oxford, and Grimsbury in the county of Northampton.

4118. I believe, among the other evidence which you have to give, you can state the difficulties which have arisen between the non-corporate and the corporate parts of your district with regard to rates?—Yes, in consequence of the feeling entertained by some of the owners and occupiers of property in the rural districts, that their local expenses would be greatly increased, a limit was insisted upon, and it was ultimately arranged that the rates in the borough of Banbury should not exceed 3*s.* 6*d.*, and in the non-corporate parts 2*s.* in the 1*l.*; that was inclusive of highway rates.

4119. Was any alteration subsequently made as to the amount of those rates?—There was. In 1860, dissatisfaction having been expressed by the owners and occupiers of house property in the district prior to 1860, further rating powers were then obtained for the hamlet of Neithrop.

4120. Will you state by what means those further rating powers were obtained?—By a provisional order inserted in one of the Local Government Acts.

4121. You have applied for provisional orders more than once, have you not?—Yes, but the object of such provisional order was to raise a highway rate in addition to the then sanitary rate. It was found that the highways required a rate of 1*s.* in the 1*l.*, and the land at that time was only rateable at 6*d.*, so that the house property had to pay in effect one half of the highway rates which were chargeable upon the land. This applied to Neithrop in 1860, when the further powers were obtained.

4122. In 1866 were further orders obtained?—Yes, in 1866 it was found that Grimsbury had become in a somewhat similar position with regard to rating, and the like powers were obtained that were previously obtained for Neithrop to rate that district to a highway rate.

4123. Is there any dissatisfaction at present with respect to the different modes of rating in the different localities?—No, I think they are pretty well reconciled now, but there was considerable opposition to the introduction of the measure first of all, and also considerable objection to any alteration in the rating power subsequently.

4124. That having been once settled, are they now satisfied?—Yes. I may perhaps be allowed to observe here that considerable inconvenience is occasioned by the district being under three magisterial jurisdictions; there is the borough of Banbury under one jurisdiction, the township of Neithrop in Oxfordshire under another, and the township of Grimsbury in Northamptonshire under a third. It would be much more convenient if the corporate borough was co-extensive with the Board of Health district.

4125. Will you describe the constitution of your local board?—It is composed of six members selected by the town council and six members elected by the non-corporate parts, the mayor for the time being being *ex officio* a member of the board; making 13 in all.

4126. Will you now state what drainage operations have been carried out?—Soon after the establishment of the board a system of drainage was commenced, the greater part of which was completed in 1855 and 1856. The sewage of the town district having always flowed into a small river, the river Cherwell, the drainage was allowed to flow into that stream or rather I should say, perhaps, that the main sewer was made into that stream.

4127. How long did that state of things continue?—In consequence of a greater quantity of sewage having been poured into the stream than there used to be, complaints were soon made by the millowners on the stream, and by persons occupying land on the banks of it, of the nuisance arising from the pollution of the stream.

4128. On those complaints being made what steps did you take to remedy the evil?—We erected deposit and filtration tanks, but very little good resulted from them. Then there was a system of deodorization adopted, and chemicals were used with a view to deodorizing and disinfecting the sewage, but that also failed.

4129. Whose advice did you take in the matter of deodorizing and disinfecting?—We consulted Mr. Hawksley, Dr. Taylor, Dr. Letheby, and Mr. Beesley, a chemist in the place.

4130. And the remedies which they suggested were inefficient?—Yes, they were inefficient. We first of all applied carbolic acid and lime, and afterwards perchloride of iron and lime; but they were found to be ineffective.

4131. Those measures having failed, what steps did you next take?—Then a millowner filed a bill for an injunction to restrain the board from pouring their sewage into the stream at all, and the injunction was granted and a sequestration issued, but the sequestration was not put in force, as the board promised the millowner that something should be done to remedy the annoyance complained of, and subsequently a farm was taken for the purpose of applying the sewage by means of irrigation.

4132. What size was this farm?—138 acres of arable and pasture land.

4133. What distance from the town of Banbury is it?—About a mile.

4134. What expense did you incur in carrying the sewage to that farm?—I should say that we are obliged to pump; we are so situated that pumping power is necessary, and the erection of the necessary works, that is to say, the engine house and some tanks and pipes, and laying out the land and so on, occasioned an expenditure of 4,000*l.*

4135. Have those irrigation works led to any complaints?—No, except at one time, very soon after they were erected, there was an objection to the way in which the sewage was pumped into a tank previous to its flowing over the land, and a cottager who lived near the spot complained of the annoyance he was subjected to when the pumping commenced, but that objection has since been done away with, and there is now no complaint.

4136. Do you apply any system of filtration to the sewage?—The sewage is all filtered first; there are deposit and filtration tanks, and then there is another tank, which I may call perhaps a deposit tank, and the sewage is all filtered before it is pumped on to the land.

4137. What system of filtration have you adopted?—It is an upward filter, composed of small stone and gravel. It all flows through that before it is pumped on to the land.

4138. Is that completely successful?—I should say it is.

4139. You stated that the adoption of those irrigation works has cost you 4,000*l.*; does that include the money laid out upon the land which is to be irrigated in levelling it?—Yes. The whole expenditure has been about 5,500*l.*, including the tanks that had been previously made; but they are very useful, inasmuch as they contain a night's flow, so that we have only occasion to pump in the daytime.

4140. Thereby reducing the expense, I presume?—Yes.

4141. Did you borrow the money to carry out those works?—Yes, we borrowed the 4,000*l.* on bonds from persons in the neighbourhood, the 1,500*l.* had been previously borrowed of an insurance office, and the amount is paid off by 30 annual instalments of principal and interest, at 5 per cent.

4142. Have those sanitary measures been successful in your opinion?—I consider so in a pecuniary point of view, for last year the income amounted to 1,280*l.* 7*s.* 10*d.*, and the payments to 1,190*l.* 13*s.* 1*d.* That would leave for the profit of the farm 89*l.* 14*s.* 9*d.*; but if we are to add the 250*l.*, the payment for principal and interest, then there would be a loss of 160*l.* 5*s.* 3*d.*

4143. But in order to institute a fair comparison can you tell us what your sewage works used annually to cost before the irrigation system was adopted?—The average annual cost of the sewage works for three years before the adoption of the irrigation system was 131*l.* 1*s.*, which is exclusive of the sum of 97*l.* 11*s.* 7*d.*, the annual instalment of principal and interest in respect of the sum of 1,500*l.* borrowed to make the deposit and filtration tanks before mentioned.

4144. Will you state how much you paid towards the principal and interest upon the debt of 4,000*l.* last year?—250*l.*

4145. Will you also state how much of that is principal, and how much interest?—200*l.* interest, and 50*l.* principal. Next year of course the proportions will be different.

4146. Can you tell us what the working expenses of this system are?—Rent, less property tax, 605*l.* 3*s.* 1*d.*; rates and taxes, 57*l.* 4*s.* 7*d.*; coals for engine, 111*l.* 16*s.* 0*d.*; labour in cultivation of farm and driving of engine, 216*l.* 2*s.* 0*d.*; sheds and farm implements, 82*l.* 0*s.* 6*d.*; manager's salary, 45*l.*; auctioneer's expenses of sale, including commission, 73*l.* 6*s.* 11*d.* That will make a total of 1,190*l.* 13*s.* 1*d.*

4147. Is the farm managed by the whole board or by a committee of the board?—By a committee. We have two farmers on the board, and they take upon themselves to manage it with the assistance of the surveyor. The loss upon the year, including the payment of principal and interest, as I have said, would be found to be 160*l.* 5*s.* 3*d.*; and I think perhaps the Commission might wish to know, that, taking the population of the town at 11,000 that would be about 3½*d.* per head of the whole population for the removal of all the excreta of the inhabitants.

4148. With regard to the success of this system from a purely sanitary point of view, has your death rate decreased of late years?—It has. At the time of the application of the Public Health Act the death rate was 26 per 1,000 of the population. Now the average of the last 9 years is 18 per 1,000. At the beginning of the year 1859 it was 20 per 1,000 in 1860, 18½ per 1,000; in 1861 it was 14 per 1,000; in 1862 it was 14½ per 1,000; in 1863 it was 17 per 1,000; in 1864 it was 17½ per 1,000; in 1865 it was 20 per 1,000; in 1866 it was 17 per 1,000; in 1867 it was 19 per 1,000; and in 1868 it was 20 per 1,000.

4149. In what year did you state the death rate was 26 per 1,000?—In the year 1850 the Government inspector Mr. Rammell found that the death rate was 26 per 1,000.

4150. Was that for that one year?—I do not know how he calculated it. I think he took the average of a few years, but I do not know how many.

4151. What are the words which the Government inspector used in his report?—That the amount of mortality in the district so included during the seven years ending 1848 had been after the rate of 26 per 1,000.

4152. In addition to the reduced death rate have there been any additional advantages to Banbury?—We find that it is a great comfort to the inhabitants to have all their excreta removed away without suffering any annoyance from it; the advantage is in the reduced death rate, and the convenience to the inhabitants.

4153. Are there many waterclosets in Banbury?—A great number now.

4154. What is your means of water supply?—We get our water through a private company principally; there are pumps and wells.

4155. Are there many houses which have not waterclosets and which depend entirely upon cesspools?—Not many; there are some in the more outlying parts of the district, but scarcely any in the town and the more populated parts of the rural district.

4156. Is it the case that until comparatively recently waterclosets were very rare in Banbury?—They were very rare previous to the application of the Public Health Act.

4157. Have the people become habituated to the use of them?—Yes; they would not like to go back to the old system.

4158. Will you state the population of Banbury, and also the area and the rateable value?—The population of the district in 1861 was stated to be 10,238; it is now, I believe, about 11,000. The area is about 4,000 acres, and the rateable value 39,227*l.* 17*s.* 6*d.*

4159. Have you experienced any difficulty in making or collecting the rates?—We find no difficulty in collecting the rates, or in making the rates, except that there is great trouble in making them; there appears to be great unnecessary trouble given. First of all there are estimates to be made, then an order obtained from the board to make the rate, then notice given of the rate, then the rate is made and notice given that it is made. There seems to be unnecessary labour in making those rates.

4160. Can you suggest any simpler mode?—I would suggest that the estimate should be laid before one meeting and the rate made at another. That would save a vast deal of trouble.

4161. Of course you would provide that sufficient notice should be given?—Yes, we would give the same notice that is given on the making of the poor rate; there is only one notice given with regard to the poor rate, although the poor rate raises considerably more than is raised for sanitary purposes.

4162. Have you adopted any code of byelaws?—Yes; we have byelaws upon various subjects, for the regulation of common lodging houses, for the regulation of slaughterhouses, as to the removal of refuse, the cleansing of privies, and so on, and as to the width and levels of streets, and the constructing of houses.

4163. Have you adopted the model byelaws from the central office?—Yes, with some alteration.

4164. Have you found any difficulty in enforcing them?—We have always hesitated about enforcing them on account of the questions which are raised as to the validity of byelaws. The board have never ventured to enforce them against reluctant parties. When a work has been required they have generally compromised with the person if there has been any opposition, rather than take proceedings, on account of the difficult questions always arising as to the validity of byelaws.

4165. Do you think it would be better that many of the provisions of the byelaws should be included in a general Act?—Very much better, and a great many of them might I think. There are some local circumstances which perhaps would render byelaws necessary to some extent, but a great many of the provisions affecting lodging houses, slaughterhouses, and some other matters, might very well I think be put into a general Act.

4166. Can you point to any specific defects in the existing Acts?—On looking through the various Acts to ascertain the law on the question raised, and finding similar clauses in several of them, I have found a difficulty in deciding under which clause I should proceed; there are so many Acts that it is a great labour to look into the law upon any sanitary question involved; there are between 20 and 30 Acts affecting sanitary measures.

4167. Would you wish to see a consolidation of the present Acts?—Yes, it would be very desirable indeed. I do not know what we should do if it were not for Mr. Glenn's book, and that is a volume of a thousand pages of closely-printed matter.

4168. (*Lieut.-Col. Ewart.*) In the system of drainage that you have now adopted you have said that you pump the sewage; do those drains carry away the

roof and the surface water as well as the drainage of the houses?—Yes.

4169. Does not that considerably increase the amount to be pumped?—Yes.

4170. And does not that increase the working expense?—The more diluted it is the better.

4171. Is that the experience of the farm?—Yes.

4172. Have you found in very wet seasons, such as last winter for instance, that the farmers complained that it was too diluted?—Last winter being very wet there was too much moisture upon the land occasionally.

4173. Did that interfere with the farming operations?—No.

4174. Have you found at any time of year, such as in frosty weather, that the farming operations were interfered with seriously?—Last winter was our first winter, and there was no frost of any consequence.

4175. (*Sir Thomas Watson.*) I think you stated that the introduction of waterclosets combined with intercepting sewers, and a system of irrigation, had improved the health of the town and kept your river pure?—Yes.

4176. (*Dr. Acland.*) Has the attention of your engineer been turned to the question of separating the rainfall from the sewage?—The attention of the engineer was called to it, but as we had no water supply at the time it could not be done. The town was badly supplied with water. Since then there has been a water company established, and probably if the works had to be erected again a different system might be adopted.

4177. Will you say in what way that affected your water supply? Did they use the rainfall in the houses and yards?—The town was very badly supplied with water at the time that the sewers were made, and they could not make two systems; and they required the rainfall to flush and cleanse the sewers.

4178. (*Lieut.-Col. Ewart.*) You mean that now you can flush them, but then you could not?—That is so.

4179. (*Dr. Acland.*)—Then we understand that your reason for including the rainfall was simply because you had no adequate water supply?—Yes.

4180. And that the information which you have at present would lead you, supposing you had to re-sewer the town, to adopt a different system?—I think it probably would have been so.

4181. Banbury is increasing in population, is it not?—Yes, it is.

4182. Do you propose in future to disconnect the rainfall in the extension of your sewers?—That has been mentioned at the board, but not with a view, I think, of seriously carrying out or making any alteration in the present mode.

4183. Have you had any calculation as to the expense of the respective methods?—No.

4184. (*Mr. Shaw.*) Of what class of persons is your board mostly composed—professional men, tradesmen, or what are the elements principally?—Tradesmen and farmers. There is one professional man on it.

4185. Are they persons of good position in the town?—Yes.

4186. What is the soil where your sewage outlet is?—It is a very stiff loam.

4187. What do you grow upon it?—Italian rye grass principally. In the commencement of this year cabbage were planted. We have about an acre of cabbage and a small quantity of carrots and parsnips, and about 14 or 15 acres of mangel-wurzel.

4188. Have you found any difficulty from the stiff soil not readily receiving the quantity of moisture which you are obliged to pour upon it?—No; it is considered rather better, for it is found that the fertilizing qualities and the obnoxious qualities of the sewage are taken up by the vegetable matter; it is the vegetable matter that purifies the water.

4189. (*Mr. Powell.*) Do you find as a matter of experience, taking the irrigation system as it actually works in practice day by day and hour by hour, that no odour arises from its operation?—Yes, very little indeed. There is a foot-road through a part and a public road by another part of the farm, and no complaints at all have been made. In the hottest weather of last summer there was occasionally a little unpleasant smell, but very little.

4190. Is the freedom from smell so complete that you would not object to dwell in a house placed on the farm and bring up a young family in that house?—My experience of it has not gone sufficiently far for that. I have occasionally, when I have gone over it, found a little unpleasant smell, but a smell not at all equal to that in some of the courts and lanes of the district before the application of the Public Health Act.

4191. Viewing the thing practically, as a matter of daily life, you would not say that the freedom from smell was so complete that the closest neighbourhood to the sewage farm would be a convenient residence?—It is not a spot to be selected, but very little annoyance indeed arises from it. It depends in some measure upon which way the wind is. If there is a little wind that blows into your house it would be unpleasant.

4192. Practically, supposing there was an estate available for building, and one half was devoted to a sewage farm, you would say, would you not, that the value of the remaining half for building purposes would be lessened?—I should think it would.

4193. I believe that you have in Banbury, as you have stated in your evidence, a corporate and a non-corporate portion, and a town and a country portion?—Yes.

4194. Is there any difficulty as to the adjustment of the burden of rating between the rural and the urban population?—No. We make separate rates for each portion of the district, and keep separate accounts of the receipts and expenditure in each portion. There is a separate rate for Banbury, a separate rate for Neithrop, and a separate rate for Grimsbury; there is also a separate account kept of the expenditure of Banbury, of Neithrop, and of Grimsbury.

4195. And the rate in the pound differs in those different districts?—Yes, it differs somewhat. It differs but slightly in the non-corporate parts. The borough has been rather more expensive, as there is no land belonging to it.

4196. What is the rateable value of Banbury?—The rateable value of Banbury is 16,780*l.* 2*s.* 6*d.*; of Neithrop 16,885*l.* 17*s.* 3*d.*, including the land; and of Grimsbury 5,561*l.* 17*s.* 9*d.*, including the land.

4197. Can you state the average rates in those three districts during the last three years?—In 1866, in Banbury, the rate was 2*s.* 11*d.* in the pound; in Neithrop, 2*s.* 2*d.*; and in Grimsbury, 2*s.* 7*d.* In 1867 the rate in Banbury was 2*s.* 3*d.* in the pound; in Neithrop, 1*s.* 11*d.*; and in Grimsbury, 2*s.* 8*d.* In 1868 the rate in Banbury was 1*s.* 11*d.* in the pound; in Neithrop, 1*s.* 9*d.*; and in Grimsbury, 2*s.* 4*d.* I should say that the rates in Banbury were much less last year in consequence of an existing debt which was incurred under the old Street Act many years ago having been paid off.

4198. Has there been any difficulty in adjusting the burden of rating between the urban and the rural population?—I should say that in the application of the Sanitary Act we experienced considerable difficulty on account of the fears and jealousies which existed as to whether the rural district would not be put to considerably greater expense and have their affairs interfered with; but it was ultimately arranged that each of the districts should bear its own expense, and that the expense in each district should be limited; and that did away with the difficulty.

4199. How was the expense in each district limited?—By the Act of 1852 applying the Public Health Act to the district.

4200. Was that the Act confirming the provisional order?—Yes.

4201. And you find that the people in the corpo-

rate portion have no desire to lay any greater burden of rates upon those who live in the non-corporate portion?—Yes.

4202. There is for the present at least an amicable settlement?—Yes, we now go on very comfortably.

4203. Is there any discontent with regard to the lower charge upon land as compared with other kinds of property?—The low charge upon land is a fair one, as far as regards sanitary matters, but when you come to the highways it is unfair; and it was found to be unfair, as I have before stated, inasmuch as the house property had to bear about one half the burden of the highways, which the land ought to have borne.

4204. Has that created dissatisfaction?—I have observed that dissatisfaction did exist, but all parties are now satisfied because the land only pays for highway purposes, and pays nothing for sanitary purposes, either in Neithrop or Grimsbury.

4205. Assuming, what I should suppose from your evidence was not probable, that there was inactivity in Banbury on the part of the authorities in their conduct of sanitary matters, do you think that a county board, if such a board could be devised, would be of any service as compared with the Home Office in stimulating them?—No, I do not think it would. As far as my experience goes, the counties are not very active in sanitary matters, at least if I may judge from the board of guardians.

4206. Do you think that in the case of a local authority being negligent or careless the Home Office would be a better stimulant than any county board which is likely to be brought into existence?—I think so.

The witness withdrew.

(27.) William May, Esq., examined. *W. May, Esq.*

4207. (*Chairman.*) Were you solicitor to the promoters of the Cray Valley bill of this year?—I was.

4208. Will you describe the scheme which was contained in that bill?—The bill shortly was the incorporation of the sanitary law and making it applicable to the villages of Orpington, St. Mary Cray, St. Paul's Cray, Foot's Cray, Chiselhurst, North Cray, Bexley, and Crayford, or such parts of those parishes as would be in the watershed of the Cray Valley or the river Cray. I should say that there is a river commencing at Orpington, and running nearly due north into the Thames at Crayford or Dartford Creek. The plan was to combine the various parishes in the valley, to have one main sewer to take all the sewerage of the respective villages, and to discharge it in the marshes at Crayford, and utilize the sewerage on the marshes; and as it was proposed to make a large profit from that utilization, and so make the scheme in a measure self-paying, the evidence that was laid before the committee went to prove that without the utilization paying anything whatever the scheme could have been carried out for about 6*d.* or 7*d.* in the 1*l.*, and if the utilization succeeded in accordance with the evidence of the Honorable Mr. Petre and one or two others, then in all probability the scheme would be self-paying. At Crayford marshes we found that there was an area of some 1,000 or 2,000 or 3,000 acres of land very suitable for irrigation purposes, and if we had succeeded, it would certainly have produced a very large profit.

4209. You have given us the names of the villages in the watershed of the Cray, will you now state what the total population of them is?—As nearly as possible about 20,000, and the length of the main sewer which would have been necessary for the 20,000 inhabitants was about nine miles.

4210. Were there many mills or factories upon the river bank?—There was a very large paper mill at St. Mary Cray, employing some 700 or 800 hands; another paper mill at St. Paul's Cray, employing 200 or 300 hands, and another paper mill at Foot's Cray, which has now been closed for some two or three years, and evidence was given before the committee that the expense of providing proper works for disposing of the refuse water from that paper mill was almost sufficient to account for the mill being kept closed. At Bexley there are flour mills, and when we come to Crayford there are several printing mills. The printing mills and the paper mills all pollute the stream more or less.

4211. I presume that the river is in a very bad condition?—The river is in a bad condition, and would be very bad if the owners of the paper mill at St. Mary Cray did not filter their refuse. They filtered their refuse, and almost successfully, but still at a large expense. The mill at St. Paul's Cray filters a little, but the mills at Crayford do not pretend to do anything in the way of filtering, they are near the outfall; the river simply runs through the marshes, and there being no owners below Crayford mills to complain they get off with impunity.

4212. If that bill had been successful what would your local authorities have been?—Our local authorities in the first instance would have been a board acting by consent. Some of their names were mentioned in the bill, a board of gentlemen comprising two or three justices of the peace, and one or two of the principal persons in each parish, altogether numbering 12 for the eight parishes.

4213. Had you any precedent for that mode of action?—No, we had no precedent whatever, except that in some drainage bills I think there are some precedents for selecting a board when the authority is for the drainage of lands. Then we proposed that after the first board all new members should be elected by the different parishes, a certain number to each parish.

4214. Did you apply for a local Act because you found the existing sanitary laws insufficient?—We did so.

4215. In what way were they insufficient?—We had this difficulty to contend with in the Sanitary Acts. We first of all in the upper part of the valley have Orpington, St. Mary Cray, and St. Paul's Cray, three adjoining parishes, but the villages all join; there is one continuous row of houses on each side. Then we found that if we could have got the consent, say, of one parish, St. Mary Cray, to have joined our vestry under the Sanitary Act, which would have been necessary, if they had agreed to adopt the Act no doubt they might have done it, and they might have had a system of sewerage, but having done that the difficulty was the outfall, and we could not get an outfall without going into St. Paul's Cray. When we came to St. Paul's Cray we found that St. Paul's Cray wanted a system of drainage as well as St. Mary Cray, and we found that we could not get an outfall at St. Paul's Cray without going to Foot's Cray, and so we went on from one village to the other, until we found that it was absolutely necessary, in order to have any system of drainage, we must combine eight different parishes, because one lay immediately below the other. Then I turned my attention to adopting the Sanitary Acts of 1865, 1866, and 1867, and the first difficulty that I met there was as to whether it was at all possible that the eight parishes would voluntarily combine. I made the necessary inquiries, and I found that there was not the slightest chance of the powers vested in the parishes being put in force by the ratepayers; in fact there did not seem the slightest endeavour on the part of hardly any one to assist in adopting a scheme of drainage which would involve a very considerable outlay. Then we considered whether we could compulsorily join the different parishes, and we were advised that we could not compulsorily join them, and that unless the parishes voluntarily combined, the Secretary of State would have very little power; he might have the power, and by a tedious process it was possible that we

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might have succeeded in getting a sewerage scheme carried out, but the difficulties of the notices, and the process that one would have to go through to combine five or six or eight parishes, were such that it would be almost impossible.

4216. If there was that difficulty in procuring voluntary co-operation, what prospect was there of your being able to carry through a private local Act?—We considered that Parliament by passing the Sanitary Acts intended to give compulsory powers, and consequently would give the proposed board compulsory powers. We felt this, that some scheme was wanted, and we supported that scheme with evidence on every point, and it was admitted that the scheme was well supported by good evidence, but I think the scheme failed not because it was not wanted, but because it was without a precedent. Of course we do not know the reasons why the scheme was defeated, but it was the impression that it was really because it was without precedent going to Parliament upon a matter of this kind. The promoters instituted the bill with the object to combine the interest of the paper mills with the interest of the parishes, and we had a very special clause in that Act rating the manufacturers at 50 per cent.

4217. It was a public spirited attempt on the part of certain persons with very little prospect of its being carried through?—That was really the result of it. Although it was felt that some system was absolutely required, and the sanitary evidence showed that it was absolutely necessary that some scheme should be adopted.

4218. In what condition are those villages on the banks of the Cray?—They are in a very unsatisfactory condition as far as sanitary regulations are concerned, the evidence of Dr. Letheby as well as Dr. Poole and Dr. Matthews and two or three other doctors, all showed that through the valley, that is the immediate sides of the river, the sewage was then percolating its way down the valley with the level of the stream, and there was the evidence of one man, who said that he had digged four wells before he could get a well the water of which was fit to drink.

4219. You had a report from the medical officer who inspected that district, had you not?—There is the medical report of Dr. Poole, and a supplementary report of Dr. Poole, and the report of Dr. Ranger, which go very fully into the sanitary state of the valley.

4220. That report of Dr. Pool's reveals as bad a state of things as it is almost possible to conceive?—I think it does. I do not think it could be possible to have it but very little worse. We find that at Bexley Heath they had a system of cesspools; it is a very growing place; we found that cesspools were continually running over, and running down the streets, but we considered that the bulk of the people were quite against a scheme of improvement.

4221. The people who were suffering from those inconveniences were set against any improvement?—Yes, they thought that it would cost them 4*s.* or 5*s.* in the pound; that opinion was circulated very largely, and we could not remove the impression, and we had a very strong opposition to the bill on the part of the people to begin with.

4222. Have there ever been any epidemics in that valley?—At Crayford there was an epidemic of cholera some 15 or 20 years ago, that is, at the mouth of the valley; it was a very serious outbreak, but we had no figures. There was no record kept at the time.

4223. Is the general condition of the valley unhealthy?—No, I think the valley is healthy itself; it is only in the thickly populated parts that we are afraid of suffering from enteric fever. It was proved by evidence that there was a great deal of enteric fever in every village, and it was stated that if we should have a season of epidemics most likely we should suffer in all the villages.

4224. Can you give the Commission any information as to the death rate?—No, we had no means of obtaining that, because the parishes that were included in the bill are in two different unions. The unions comprise 32 parishes, and our bill only comprised eight.

4225. Having failed to procure this Local Act cannot you fall back upon any of the existing Sanitary Acts?—No, they are really of no use to us; I think that the Sanitary Acts would do for a single parish, but when you come to combine there is very great difficulty. I have an opinion that was taken at the time by Mr. Keane, the Queen's counsel, on that subject, and it was given in evidence.

4226. Will you read to the Commission Mr. Keane's opinion?—"I am of opinion that the Acts mentioned " will enable the sewer authorities to obtain the " object indicated if they concur in sufficient numbers, " and are prepared with plans so framed as to con- " vince the Secretary of State that he ought to make " an order for forming the several districts into an " 'union of districts.' The Secretary of State has " power to refuse the order, even if he be satisfied " of the expediency of the proposed union. He ought " not to grant it unless he be so satisfied. He has no " authority at all unless the several sewer authorities " of the district to be affected consent; and the right " of consent arises if (1) the districts adjoin, or (2) " lie within the same drainage area, or (3) are " otherwise conveniently situated. It is very im- " portant that all the sewer authorities in the natural " drainage area should agree, and be prepared to " co-operate in the proposed scheme, but a joint " sewerage board will have power without as well " as within the united district for purposes of outfall " and distribution of sewage. The concurrence of " all will not be absolutely necessary if a scheme " can be framed not affecting the districts of any " dissentient authorities, and providing efficiently for " the districts of those which assent. First, there- " fore, get the consent of the sewer authorities; frame " the proper scheme in respect of drainage; 2nd, " in respect of outfall and distribution; 3rd, in " respect of utilization, if practicable. The term " 'proper scheme' includes considerations of expenses " in outlay, oppositional difficulties, and of practical " advantage gained. It must point out that the " power of enduring the consequential assessments " has not been overrated, and also show the feasibility " of the proposed utilization or distribution. Let " the consents and the plan be laid before the Secre- " tary of State. The former must contain the " substance of the statutory condition of jurisdiction. " The latter is the evidence of the 'expediency' " contemplated by the Act. Add to it such obser- " vations as will tend to explain it, and show what " facilities of water supply the district affords. (2) " I do not see any objection to the use of the sewer " by the millowners, if the matter of pollution is not " such as to interfere with the purposes of the Acts, " unless such use be attended with additional expense, " not fairly assessable on the general body of the " contributors. So far as such expense is concerned, " an arrangement might be made. (3) I incline very " much to the opinion that the river Thames is not " a 'natural watercourse or stream' within the " meaning of the 24 and 25 Victoria, chapter 61, " section 4. That section and the sections of other " Acts to be read with it contemplate, I think, an " interference with private property either by claim- " ing rights, such as a right of fishery for instance, " or creating nuisances or obstructions. The river " Thames is a highway at the part in question, and " the fishery, as far as I am informed, public. That " part also seems to be without the jurisdiction of " the Metropolitan Local Management Acts. I think " it advisable that the Secretary of State should be " satisfied that the navigation of the Thames will " not be impeded, or any injury to health or offence " to the senses created at high or low water by the " discharge proposed; and, as it seems to me, that is " the limit of the difficulty in this part of the plan. " As nothing is said about any user of the water of " the Thames at the spot for private purposes, as of " right, the plan may be carried out, if once the order

" be made, subject to the risk of an indictment if a " public nuisance be created. 'Filtration' would " seem to be efficacious as a means of attaining and " therefore of removing solid parts; but I doubt " whether it would sufficiently defecate fluid. (4) " The whole question will be whether the recusant " village is so situate that a practical scheme cannot " be brought into operation. If a district can be " formed answering the conditions of the 30 and 31 of " Victoria, chapter 113, though a particular village do " not co-operate, the refusal to co-operate will not " prevent the order. (5.) The power exists, but it " is very much burdened with embarrassing re- " strictions."

4227. Will you describe how you proposed to form the sanitary district?—That was one of the great difficulties in the present Sanitary Acts, and we proposed to form our district in a very different way to that which the Sanitary Acts propose. The Sanitary Acts, as I construe them, say this, that each parish may cut out a piece of a district. Or you may go further, you may combine the other parishes, and you may cut out a piece of the district, and say that that shall be the district; but having done that, supposing that building increases, the same as it is doing in the Cray Valley, when you get to the outside of the district which you have cut out under the Sanitary Act, you must then go to the Secretary of State again to enlarge the district. And as each district was being continually enlarged in the valley it would have been necessary every year or so to have gone to the Secretary of State to enlarge our district. We proposed in our bill to take first the watershed of the whole valley, and that we called the district, which for sanitary purposes was placed under the proposed board, then we cut out of that what we called the rating district. The rating district comprised all the present villages and houses that were conveniently situated for purposes of drainage. Then we took power in the bill that every time houses were erected out of what we called the rating district, we by laying a sewer to the new houses should make them come into the rating district, so that as the buildings increased from the original rating district in the watershed, we should take every house which was built in the course of time without going again to Parliament.

4228. Could you extend your sewer to houses already built, and bring them into your district by that means?—Yes, that was the whole intention. And we prepared all our plans to take the drainage simply for the present; and whenever it was necessary to extend our drains in the watershed we took power to rate them. In the meantime we did not rate any land within the boundary.

4229. Then the difference between your district and a district formed under the Sanitary Acts would be that yours is capable of expansion by that arrangement?—Yes, to the whole watershed, so that the whole of the watershed when it was built upon would eventually come under the proposed board.

4230. Will you explain by what means you proposed to collect rates for the purposes of the board?—Power was simply to be given by the board to the overseer of each parish to collect the amount of the rate which we should require. Under the sanitary Acts it would appear that, supposing there was a combination of parishes, there would be a committee appointed, which would be the governing body under the combination, and that committee would have to go to the vestry for the authority, the vestry would have to go to the overseer, and the overseer would have to raise it. We proposed that the board should simply make out an account of what they would require, and send a notice to the overseer, and order him to collect it. If we had had a combination under the old law, if the vestry did not approve of anything that the board had done, they would simply object to the rate being made, and we might possibly have come to a standstill.

4231. You provided a means of simplifying the machinery for collecting the rates?—Yes.

4232. Did you make any novel proposal as to the amount of rates to be collected?—We limited the rate to 1*s.* 6*d.* in the pound in any one year.

4233. Were there not also proposals as to the incidence of rating?—We had different provisions as to property; that was another peculiarity of the scheme. We made the millowners who drained their refuse water into the sewer liable to be rated 50 per cent. more than the other people on other property; and land that was within the rateable district we rated at fourth of the general rate.

4234. In that respect you adopted, did you not, the provisions of the Sanitary Acts?—Yes.

4235. Do you think that there is any prospect of those villages which are in such a dreadful condition, draining themselves without compulsion?—I do not think there is any chance of their doing it while the power remains in the vestries, because there are really no people of large property in those rural parishes, especially the suburbs of London. We have a great deal of property cut up into small lots, and consequently we have a great many small owners who are very much averse to rating themselves for any sanitary purposes, and they can at any time come down and swamp a vestry, supposing that the vestry were desirous of carrying it out.

4236. What is your water supply?—We have not any water supply at the present time. We have a river that rises at Orpington, and the subsoil in the immediate vicinity of the river is full of water. In some places the springs rise to the surface of the valley, and at other places the wells are perhaps only from two to four or ten feet deep.

4237. (*Mr. Powell.*) Excepting as regards the power of rating which you have mentioned, what is there in your bill which cannot be done by the general Acts, assuming that the local authorities can be compelled to combine for those purposes?—The general statutes have not a clause as to the rating of mills, and they have not the expansiveness of the district. Then they could not work the watershed as well as we do.

4238. Why not?—The difficulty would be in the carving out, as it were, of the district. We simply take the watershed, and we go in irrespective of any parish or any district or any authority.

4239. But you are aware that there is power to combine and also power to cut out a portion from a parish, and to combine one portion of a parish with the rest?—Yes, there is that power, no doubt, supposing that it could be carried out.

4240. But, saving the point which you have just mentioned, you do not know of anything in your bill which is not provided for in the general statutes?—There is power to take lands for sewage purposes, which is very plain in our bill, but which is very doubtful in the Sanitary Acts.

4241. How is it doubtful in the Sanitary Acts?—That is the question which I asked Mr. Keane, and he says that the power exists, but it is so embarrassed, the restrictions are so many to overcome in working out the Sanitary Acts, as well as any other Acts that apply to the rural districts. There are so many forms to go through, and those forms become so complicated that it is impossible to adopt anything. I have made some calculation as to the number of forms which we should have for the eight different parishes, and I think they would come to something very nearly a thousand.

4242. When you have complained of the complicated machinery under the general statutes do you refer to the machinery of the Lands Clauses Act?—No, simply to the Sanitary Acts of 1865, 1866, and 1867, and the Acts they incorporate.

4243. Can you explain in what particular?—It would be too long a question if you came to work out what is to be done with regard to the notices.

4244. Do you wish to take the property of people without notices?—No; that would do very well for one parish, but if you have to repeat it for eight different parishes it becomes very awkward indeed.

4245. Is it not the case that in the report of

Mr. Ranger and Dr. Poole it appears that there was the most flagrant neglect of the most ordinary sanitary regulations?—There is no doubt about it.

4246. In fact, the state of the district was so gross and so foul that one is scarcely willing to place on the notes the details given by Mr. Poole?—That appears by the reports, and it is strictly correct, I know from my own knowledge.

4247. Is it not the case that the Nuisance Removal Acts exist, and are strong enough to greatly change that condition of affairs without resorting to a special Act of Parliament?—I do not think so with the present power. The power is really vested in the vestry.

4248. Have you never heard of a nuisance authority?—Yes, we have a nuisance authority appointed by the vestry, but all that the nuisance authority can do is this, he can order a privy to be emptied if it is full, but there the matter ends. A privy is emptied, and it is foul again, and the wells get foul, and so the matter goes on; but we cannot get an effectual remedy without making one sewer, and taking everything clean out of the village; we do what we can with our powers.

4249. Is anything done by the nuisance authority?—Yes; there is an inspector of nuisances of every parish.

4250. Do not you think that it might be well to apply the ordinary law before going to Parliament for extraordinary measures?—The ordinary law is simply this, as I take it, that the inspector may cause nuisances to be removed, but when you come to large thickly populated villages he does not, in the first instance, see all the nuisances, because if a man has a cesspool, which is very often in fact the only means of drainage in those villages, the nuisance inspector cannot tell whether the sewage from that cesspool is percolating into a neighbour's well 10, or 15, or 20 feet off.

4251. He can tell very well if there are nuisances of such a kind on the surface?—He can tell to a certain extent no doubt; but the great nuisance in the district is the wells being contaminated. All our drainage being by cesspools, and the soil being gravel, the sewage from the cesspools percolates into the wells.

4252. Still, as a fact, have not the nuisance authorities in your valley been disgracefully inactive?—I do not think that they can do more; they do what they can, but they cannot do more without further power. They must either have a system of earth closets, and take the solids from the liquids and take the rest of it away, or they must have a sewer.

4253. You think then that the condition of affairs described in the reports, the like of which I never read, and the like of which I thought could not exist in England, could not be abated as they are abated in other districts, that is to say, that they could not be abated in your district without resorting to extraordinary measures?—I think not. I do not think practically they would be done. I have studied the matter for some five or six years to see whether we could possibly do anything, there are so many difficulties in the way of working; but it is the great question of money that is the main difficulty, that persons will not consent to rate themselves unless it is a very strong case indeed.

4254. (*Mr. Shaw.*) I do not understand why your authorities do not try to remedy the state of things described in this evidence before the House of Commons?—As Dr. Letheby said in his evidence, the state of the valley was such that if we had a sewer down through the valley, and everything put into the sewer directly, it would take some years before the water would recover its natural purity.

4255. My question referred to privies not emptied and houses in a disgraceful state.—There is no doubt that there is great neglect on the part of the authorities, but then they do not know what to do with it if they do empty them.

4256. Is there a reluctance in those vestries to use the power that they have?—I do not think that they do as much as they ought to do.

4257. Do any of the upper classes serve upon those bodies?—In all this district the vestries are attended by the farmers; the farmers are the ruling body in the valley, and they care but very little about the sewerage.

4258. But there are gentlemen, I suppose, residing there, who might attend if they chose and take part in the business?—Yes. I do not think, as a rule, that in any of those parishes above three or four attend the vestry. Take St. Mary Cray: I have been at the vestry two or three times, and perhaps there may be half-a-dozen present. Take Orpington: there may be three or four persons who attend there, but very few.

4259. But does not it come to this, that the upper classes are very negligent in not attending and putting their shoulders to the wheel, and remedying this state of things by their existing power?—I think that something ought to be done.

4260. Do you suppose that any one system of government could be suggested that would act better than one elected body?—I think that the power, so far as concerns sewerage and drainage alone, ought to be vested in some higher authority than the vestry.

4261. Would you be in favour of a county board to control them?—I should be in favour of extending the powers of the Home Secretary, so that, on the complaint of the inhabitants, he might make inquiries, and, if he was of opinion that some system ought to be carried out, his officers should devise that system, and that he should have very extensive powers for ordering it to be done.

4262. Has anybody complained to him of the existing state of things, because unquestionably there are a great many things he could remedy under the Act of 1866?—I do not think there has been a general complaint made to him.

4263. But has there been any complaint?—I do not think that there has; not to my knowledge. We have very great difficulty to contend with. We want to provide for sewerage and we want to provide for the refuse water from the mills. We have one paper mill closed through the stringency of the law as to the pollution of streams. We have another mill that is incurring very large expense in filtration; and we have other mills where they do pollute the stream; and we wanted to deal with the whole question; and that was the principal object of the bill.

4264. (*Mr. Whitbread.*) Did any two of those villages agree to unite for drainage purposes on this occasion?—No.

4265. You never got the assent of any one village?—No; it worked out like this, that in Parliament six parishes did not oppose and two did.

4266. But I suppose that the six parishes who did not oppose rested on the opposition of the others?—Yes.

4267. (*Chairman.*) Do you prefer the board of guardians to the vestry as the local authority?—No; I would prefer the power simply as to sewerage, but to be limited simply as to sewerage in the Secretary of State.

4268. (*Mr. Whitbread.*) But as between those two bodies which would you prefer?—I do not think that the board of guardians would be the proper authority, because in this case there are two boards of guardians representing 32 parishes, and there are only eight parishes that would be in this watershed. It would work out in this way: in one board of guardians there would be 16 members, but there would only be four that would be in the watershed; so that, supposing the board of guardians had the power, there would be 12 persons on it who really had no interest in the place at all. We want an authority who will go away from the whole line of the parishes and take the watersheds.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 24th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
SAMUEL WHITBREAD, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JAMES PAGET, Esq. F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

(28.) HENRY WYLDBORE RUMSEY, Esq., M.D., examined.

H. W. Rumsey, Esq., M.D.

24 June 1869.

4269. (*Chairman.*) I believe you are a member of the General Medical Council, and also the well-known author of several writings upon State medicine?—I am.

4270. What do you consider to be the main causes of the acknowledged defects in the sanitary management of provincial districts?—I believe they may all be referred to a few primary and fundamental deficiencies in organization. First, the want of systematic inquiry and constant sanitary inspection, aided by complete statistical returns of sickness and mortality and their causes in every district. Secondly, the want of highly qualified resident officers in proper position, by whom sanitary inquiries and inspections should be made and recorded, and statistical returns verified and collected for local use. Thirdly, the want of a single order of competent local authorities fortified by scientific advisers and made responsible for carrying into effect all necessary sanitary measures in districts of sufficient and suitable extent. Fourthly, the want of some clear and adequate definition of the qualifications, duties, powers, and relations of both local authorities and officers. With regard to the first-named deficiency, a national system of sanitary inquiry, inspection, and record ought, I submit, to be universal as regards localities, continuous and regular as to times, and comprehensive as to subjects. Its results ought also to be readily applicable to sanitary administration. Now there are no arrangements for sanitary inquiry in this country which are at the same time universal and continuous and comprehensive, for certainly no inquiries made by any central authority can be so described. As to local reporters, few and scattered as they are, there is no security for their competency or their due independence; one branch of inquiry and record, namely, that under the General Register Office, is both universal and continuous, but its deficiences are serious, and its results are not available for prompt local use.

4271. Do you consider that any general system of sanitary inquiry should be based upon local registration?—Yes, certainly. Returns of vital statistics, full and accurate, are indispensable; they are the very foundations of sanitary science and practice.

4272. Such registration being now at work in districts, that is to say, unions, what do you think are the chief defects of that system in a sanitary point of view?—Some of the most important facts recorded on that system are not verified; they are sometimes erroneously reported, and there is no legal security against fraud and concealment of crime, neither are the returns brought home to the authorities and people of each district in a serviceable form. Many other important facts relating to mortality and reproduction and public health are not returned at all; they are not even ascertained. The causes of death are, as I shall explain, very imperfectly returned. Such defects of information render sanitary conclusions unreliable and sometimes fallacious; local sanitary measures based upon them become open to question, if not inefficient in operation.

4273. Do you think that the facts recorded by the registrars should be published and utilized in every registration distirct?—I believe they might be but they are not; for in all, but a very few populous districts, where there happens to be a superior officer of health or some active sanitary volunteer, there are no skilled persons empowered to examine, analyse, explain, and edit the returns, nor are the local authorities able generally to act upon the information if rendered.

4274. By "registration district" do you mean every district of which the board of guardians is the nuisance authority?—I do mean that. I would add that authorized information can be obtained only from the publications of the central office, that is to say, the General Register Office, and those do not furnish all or nearly all the information that we require. For instance, there are quarterly returns of births and deaths for the 640 registration districts, but those do not and cannot be expected to contain all the particulars of information relating to each place. The ages of males and females who die are published only once a year, and much more than a year after the deaths have occurred. As to sub-districts the returns of births and deaths are published only in the annual reports, and without ages, and without the causes of death. As to other groups of population which may differ widely from the surrounding country and from one another in respect of class, occupation, density of population, and so forth, where such groups or townships do not happen to coincide with the districts or sub-districts, and they are very rarely identical, you can obtain no information from the Registrar General's published reports; but I must add that for 10 of the largest boroughs of England, besides the Metropolis, the returns have been published of late, and it is said, for the precise districts under the local boards or town councils, which are the sewer authorities. All other towns I believe are included in registration districts or sub-districts which are not conterminous with the districts under local boards or vestries; there is therefore no general consent between the areas for statistical returns and the areas for sanitary management.

4275. Do you think that the vital statistics of every district under a local board might be collected and returned for the use of that district?—Probably this might be done if there were a local agency for the purpose; at least those particulars which are now entered in the register might be collected and utilized. But this is very rarely done at present, and, after all, those items form only a part of the information which we require. However, the fact is that the registers cannot be analysed, still less can they be revised and corrected for local use, in the absence of officers qualified and empowered to collect and revise them. The labour of extracting the particulars relating to any group of population, not being a registration district, is immense. No one who has not made the attempt can have any idea of the task. It is no one's duty to make the abstract, and no one can be expected to undertake it as an amateur. A special officer is required therefore to bring this information in a correct form to bear upon local administration.

4276. Supposing that we had such local publication

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of vital statistics, what more would you require?—I must trouble the Commission with rather a detailed statement upon this point, but I will make it as brief as I can. As to deaths, we need for sanitary conclusions the following particulars about each deceased person; sex, age, birthplace, parentage, class as well as occupation, civil condition, the exact locality of death, period of abode therein and previous place of abode, beside much more precise and scientific evidence respecting the cause of death. Now, of the above particulars, only sex and age are with tolerable certainty given in the register. Then, although there is a column for the place of death, the fact is often not recorded with sufficient accuracy and minuteness. As to births, there are serious defects in the register. No less than six per cent. of the real number born are admitted by the Registrar General to be not registered. No provision is made for still births or for imperfect and immature births. Many alleged to be stillborn are brought for burial on the authority of nurses or baby farmers without any guarantee that they were not born alive. The present system affords no check to infanticide. The registration of births ought, I think, to be made compulsory, or virtually so, by attaching more serious disadvantages to its non-performance. It might also be facilitated and improved under a better system of sanitary visitation; still births ought to be registered separately, and not included in either births or deaths. To promote proper returns of those still births, and of premature or imperfect births, the local supervision of a physiologist or a medical jurist is essential. Again, the age of the mother is not now entered in the birth register, and that is a very important piece of information. The order of birth ought also to be registered; for instance, whether it is a first child, or a second, or a third, or whatever number it may be of the same marriage or mother. This is a point of importance with regard to deaths in childbirth, and deaths from constitutional diseases of childhood. All these desiderata bear generally upon sanitary inferences and sanitary measures.

4277. Do the general death rates of towns or districts afford clear evidence of their sanitary condition?—Certainly not. There is no test of the health and vital force of a town population more fallacious than a general death rate. The death rate, I need hardly say before this Commission, is calculated from the total number of deaths reported in a given period in a given population, whether enumerated or estimated, and if not for a year the corresponding annual rate per 1,000 is assumed. But many sources of fallacy are involved in those assumptions and in this calculation. First, it tells nothing of the proportion of persons dying at different ages. The greatest liability to death occurs, as we all know, at the earliest stages of life, and the liability decreases rapidly until the reproductive function is established; then it again slowly increases until the limit of human life. Thus the death rate differs widely at different periods of life. For instance, the general death rate of England may be stated at 22 per 1,000 per annum. Of those 22 no fewer than nine die under the age of five years; nine only die during the next 60 years; and four are left to die after 65. But supposing that a town contains double the average number of young children in it, what becomes of the general death rate for the purposes of comparison? The fact is that the proportions of persons living at different ages, and dying at different ages, vary very greatly in different groups of population. Of course where there is an excess of persons living at ages at which the mortality is high, the general death rate is proportionately raised, however favourable may be the sanitary condition of that place, and the vigour of its people. If time had permitted, I could have brought forward instances of comparatively high death rates in healthy, vigorous populations, and the reverse, low death rates in decrepit and city populations. Even in the same place and people, the death rate may and does vary greatly from year to year, without a contemporaneous variation in the state of public health. Then I must not omit to call attention to the imperfections of the census, because that is the other element in a death-rate. I would notice particularly its infrequency, the unavoidable inexperience and incompetency of many of the enumerators, and the misrepresentations, wilful or careless or ignorant, of those enumerated. All this has been proved by statisticians of great repute. The ages of infants and women are known to be incorrectly returned on a large scale. Thus, the very elements of a death-rate, namely, the numbers living and the numbers dying at each age of both sexes, are not satisfactorily determined. I might almost say undetermined; certainly not reported; and therefore, to a great extent conjectural in every district under present arrangements. The fallacy of a death-rate becomes more obvious when we recollect that for nine out of every ten years the population is not enumerated, but merely estimated. There ought, I think, to be an annual enumeration; not perhaps a complete annual census, but a simple enumeration according to age and sex. Yet sanitary conditions are inferred and sanitary measures are planned, or executed, or neglected, upon the strength of a death-rate calculated on those imperfect data. Extraordinary mistakes have been made in those estimates. Perhaps the famous blunder at Bradford in 1859 may be recollected, which was exposed in 1861, and in which the population was found to be 24,000 less than the estimate of two years previous. A similar blunder was detected in Liverpool where the deficiency was found to be 28,000 less. Although Dr. Duncan was a very able officer of health and a statist, yet his estimate fell short by 28,000. The reckless manner in which those assumed rates of mortality are quoted for or against sanitary reforms is most astounding to anyone who knows what they are worth. In Birmingham last year, in the Health department of the Social Science Association, I heard the supposed low death-rate of that town adduced by the municipal authorities as a reason for not taking any special trouble to remove certain known causes of disease.

4278. I think you were president of that department at that meeting of the association?—I was. Now when that death-rate was analysed and inquiry made as to the particular places and occupations of those who died, and as to the reported causes of death, it appeared that the mortality had been vastly increased by preventable causes—probably as much increased as in any town in England. Then, I would add that the registers of births and deaths afford us no means of tracing each life from its commencement to its termination, and so connecting the registry of the births with that of the deaths. If only the birthplace were added, the result would show how far higher the mortality of towns really is than it appears to be from the published death rates. To test what is called the specific mortality of the inhabitants of a place, only those persons ought to be reckoned who were born and who had lived there. In towns the number of the living is constantly recruited from the rural districts, and this alters the ratio of the living to the dying. These errors in the calculations of the death-rates from the register and the census can be corrected only, I believe, by a proper sanitary organization at work throughout the country.

4279. Do you think that the registration of the causes of death is on the whole satisfactory?—I do not. It is true that the proportion of uncertified deaths is diminishing yearly, and a more correct nomenclature of disease may in time aid a better educated body of medical men to return the alleged causes more accurately and scientifically. But our present system of certification depends wholly upon private practitioners, that is to say, upon the medical attendants of the deceased; it must therefore, for obvious reasons, be imperfect.

4280. (*Dr. Acland.*) Are they obliged to sign the certificate?—They are not. Only a part of the truth is revealed or can be revealed under such a system. Of course the evidence of the medical attendant is

indispensable, but it should be subject to revision, and any deficiencies should be supplied by an officer of health. The inspection of such an officer, or his deputy, is in my opinion absolutely necessary for those deaths which take place without medical attendance, as great numbers do in the large towns of this country.

4281. (*Chairman.*) What in your opinion are the principal defects in statements respecting the causes of death made to the registrars?—The first is, that many deaths are still uncertified. In 1867 it appears that 4,630 causes were unspecified, and probably many more were uncertified. Secondly, many are certified by medical men who have not seen the deceased either shortly before or after death. Thirdly, many causes are entered by unqualified practitioners acting as assistants to registered practitioners who sign the certificate. I fear that this practice is on the increase. I will give the Commission a single example of it which lately came under my observation, and which, I think, deserves to be recorded. A friend of mine making inquiries of a sanitary kind in a district, on referring to the register as he was permitted to do, discovered that an unusual number of deaths were reported to have occurred from phrenitis or inflammation of the brain; yet the inhabitants of that district were not more mad or excitable than the population at large, and there was nothing to account for phrenitis as a distinctive disease of that district, and therefore he went into the matter more closely; and he found that the word "phrenitis" in the certificates was always written in a different handwriting from the signature of the certificate, and it proved on investigation that this was done by an unqualified assistant, his master signing the certificates *en masse* for him and he filling them up at his own discretion. Fourthly, I may mention that great uncertainty attaches to the meaning of the word "cause." The Registrar-General proposes that two or more causes should be entered according to the order of morbid phenomena. Now in cases in which more than one cause are entered, I have never been able to find out which of them is or ought to be entered in the statistical record and classified accordingly. There is a great mystery in this classification. Fifthly, some certifiers think it right to state as the cause the earliest link of the chain of causes which end in death. Some select that link in which they have felt the greatest professional interest; and some naturally take the last symptom or phenomenon, because it involves fewer troublesome questions, social or sanitary. Now the most serious statistical errors must result from grouping together those variously certified events, facts of different kinds. Thus a particular death may be entered as caused by apoplexy, or hæmorrhage, or dropsy, and so it might have been immediately, and this is probably the most simple and truthful method. It is the method in use in Germany. The certificate on this plan expresses little more than the manner of death; but the same death under another medical man's care would be traced to some zymotic disease arising from unsanitary conditions, or to some destructive habit of life, or to some constitutional disease which might not be thought creditable to the family or the ancestry. Of course the propriety of stating the real ultimate cause must often be a matter for careful consideration on the part of the medical attendant. With those elements of error and uncertainty, I distrust all calculations of the ratio of death from different diseases, although those ratios have been made use of in what is called industrial pathology, and in many other important branches of scientific inquiry. And here I would mention the advantage which a general provision of mortuaries would afford to the investigation and registration of causes of death. I need say nothing now about the direct sanitary and social benefits of such buildings. I urge the additional indirect benefit which would accrue from better opportunities for pathological investigations in decent and proper places. There should be one such mortuary by law in every registration district.

4281*a*. Do you consider that the first of a series of morbid changes which end in death, should be registered as the cause?—I think it unphilosophical, and therefore incorrect, to refer the fatal event to some original ailment or accident, which under other circumstances might have been wholly recovered from. Where there is only one plain cause, a single disease, as small-pox or scarlatina or cancer, the certificate is of course simple and trustworthy; but in long chronic illnesses the last development of disease is the best to record, because it is unquestionable and involves no theory. If the certificate is to be burdened with anterior causes, these I submit ought not to be classified among the published causes of death, but retained as elements of a general registration of sickness. It seems to me that the attempt to combine a record of diseases in the same document with a statistical record of deaths has been a failure.

4282. Would a general registration of diseases be possible?—I have no doubt that all diseases and accidents attended at the public cost in districts, workhouses, and public institutions might be easily registered at a comparatively small cost. There is in fact already a weekly record made by the surgeons of workhouses and districts, but it is rarely utilized and generally incomplete. Only here and there is to be found some active medical officer, who unearths valuable facts from heaps of schedules which now are used as waste paper after they have served their fiscal purpose. There are also records kept in hospitals and dispensaries, but in forms not available for general comparison or for statistical use. What we require is a machinery for improving those records and arranging and publishing the facts for local use. The benefit to the community and to sanitary administration would be very great and would well repay the cost. Those records are better kept, I would observe, in Ireland, where the dispensary and infirmary system includes all the sick poor of the country, and the returns of diseases and of the causes of death are made in the same areas, and generally by officers acting under the same authority.

4283. Do you think that any voluntary system of registration of sickness worked by sanitary associations could supply the public with the required information?—It has been tried again and again, and in some places for a time successfully. For instance, it is now in operation in Manchester and in Newcastle, but in both those places it owes its success to the indefatigable efforts of scientific volunteers, as Ransome, Morgan, Philipson, and others. In London it was attempted for a year or two, and facts were accumulated to a considerable extent, but the experiment failed ultimately owing to the withdrawal of a small grant from the Treasury for the expense of publishing the returns. The information to be thus obtained is of the utmost importance to the public welfare, for even the imperfect efforts already made show that a serious prevalence of disease may not be synchronous with an excess in the number of deaths. Mortality returns for short periods do not indicate the rise of epidemic storms or the primary results of unhealthy conditions, and they give no adequate sanitary warnings. Sickness returns give those warnings promptly and unmistakeably, but sickness attended at the public cost cannot be registered without public support.

4284. The same statistical areas, namely, unions or registration districts, being ready for the collection and publication of sickness returns as are now used for mortality returns, might not the same officer collect and verify both?—Undoubtedly he might. Unions being almost always indentical with registration districts, the medical officers need only be enabled and assisted to complete the information they possess. They might then forward it to the registration medical officer, who according to suggestions made long ago and now confirmed by Dr. Farr, would verify and correct the mortality returns. The country would thus secure a complete local and timely record of sickness and mortality, and their causes.

which would be a record of inestimable value to sanitary conclusions and sanitary administration.

4285. Do you propose to combine registration districts in order to provide areas of sufficient extent to occupy the whole time of a scientific officer?—It would be far better, I think, both in a scientific and in an economical point of view to combine districts, and thus to form an area of inquiry which would fully employ one officer, than to leave single districts to practitioners involved in the cares and embarrassments and personal responsibilities of private practice.

4286. Would it be possible in your opinion to employ counties or divisions of counties under county management as areas for sanitary inquiry and administration?—I should find it difficult to answer that question without reverting briefly to the historical distinction between parishes and counties, and to the singular results in which a conflict of centuries between those rival jurisdictions has culminated under the poor law and registration systems. I will refer as briefly as possible to the present state of things. It is well known that, although unions are aggregates of parishes, counties are not.

4287. (*Lord R. Montagu.*) By parishes you mean poor law districts, not ecclesiastical districts?—Yes. I do not use the word parish in an ecclesiastical sense, but in its administrative ordinary sense, meaning a district which has a separate poor rate. According to Mr. Rickman, at least 550 parishes—I mean poor law parishes—in England were known to extend into two counties or hundreds. From a parliamentary return in 1861 (No. 494), we learn that in 46 unions, at least 60 parishes extend into two counties, that is to say, the old county boundaries divide the parishes. So that when unions were formed as they were formed without the slightest respect to county boundaries, unfortunately in my opinion, the result was that no fewer than 180 of the 620 unions extended into more than one county. Here then was the double difficulty, the ancient parochial unconformity with counties and the modern union intrusion upon counties. But the climax of confusion was reached when the Registrar-General constituted a new set of counties which he called registration counties, consisting of aggregates of registration districts. Now if the old historical counties, under county law and government, are to be taken as the basis of areas for sanitary administration, the unions or registration districts would have to be again divided for sanitary purposes, and on the whole I am disposed to recommend that course. The statistical division of 180 registration districts is a less formidable prospect than the surrender of county management and organization, and a less evil than new registration counties. So I would suggest that wherever a registration district is divided by a county boundary, the vital and sanitary statistics of the two portions should be returned separate and carried each to its own proper county. There is no greater difficulty and probably less difficulty in this change than has been overcome in collecting and publishing the recent returns of the precise vital statistics of the 10 great towns which I have mentioned, some of which presented far more serious obstacles to the statisticians, owing to their unconformity with parishes, districts and counties, than might have to be encountered by the adoption of the old county limits. There would be many and great advantages in bringing sanitary matters under county jurisdiction, especially in the appointment of the proposed scientific officers for sanitary inquiry and advice; but the first step towards an improved administration would be to recognize the registration districts as the areas for sanitary investigation.

4288. (*Chairman.*) Are not several matters affecting the health of the people now administered by the county authority, and might not such authority be extended to other matters requiring treatment in larger areas than those of the existing local sanitary authorities?—That is my conclusion. For instance, the following matters come under county control:—Asylums for the insane poor; prisons, reformatories, &c., requiring sanitary inspection; inquests by county coroners; and inspection of food by county analysts, as in Gloucestershire. County administration might I think be advantageously extended to the conservancy of rivers and watercourses, over which the county has long provided bridges. Wherever the watershed of a river divides a county or includes more than one county, the conservancy authority might consist of delegates representing the precise watershed area and appointed by the county or counties concerned. County boards or sessions would be very proper courts for the appointment of the proposed officers of health and registration, and the more so since the ratepayers are, I suppose, about to be represented in the financial government of counties.

4289. How would a system of inquiry, record, and scientific advice such as you propose work with the present local authorities?—I believe that there would be less perplexity and greater satisfaction in those relations which would probably subsist between a superior sanitary officer at work in a large district or group of districts, and the various local authorities which might be acting within the boundaries of such district, than in the relations which now exist between the ordinary sanitary officers and the little boards which appoint and control them. Each sanitary superintendent of the larger district would of course be required to supply all necessary information about sickness and mortality, and any advice that might be asked for to the several local boards and vestries within his sphere of duty. And here I would urge the importance of so constituting the proposed sanitary office as to secure the efficient action of the officer. His qualifications and his duties should be carefully determined and regulated by authority, and his tenure of office should be protected by the Government.

4290. Could the officers of health appointed under the existing law be made available for the purposes of sanitary inquiry throughout the country?—After much reflection upon this point, I feel satisfied that the existing officers of health could not generally be so employed. Some would be unwilling to undertake more onerous duties, in wider areas, with the sacrifice of their other engagements; and the reformed or new local authorities might not be willing to appoint them. But, on the other hand, there are some gentlemen now acting as officers of health in the towns, who would be of the greatest possible advantage to future sanitary progress, as they have gained valuable experience, and some of them much distinction. It is a marvel to me that, under so confessedly bad a system, so large a proportion of good officers should have been secured. I venture to attribute this to the public spirit and philanthropy of my profession. Then there are officers of health, under a recent enactment, who need not possess any medical or scientific qualification at all.

4291. What enactment is it that you are referring to?—The Artisans and Labourers Dwellings Act. Of course it would be impossible to employ these in a reformed system. However, I think it is fortunate, and herein I differ from the majority of my profession, that the officers of health under Mr. Torrens's Act need not be medical men; and in fact some of them are not medical men; an obvious deficiency of qualification will leave them to be more readily dealt with under a proper organization.

4292. How would you reconcile existing appointments, and the claims of existing officers, with a general organization, such as you propose?—In cases where it might be considered important to retain experienced and able men in office, arrangements might, I think, be easily made for the personal tenure of existing appointments, at the same time providing for the future amalgamation of their districts, if small, with adjacent territory, which might be temporarily committed to other persons. In some of the very largest towns, for instance Liverpool, where Dr. Trench presides so ably over sanitary action, it would be desirable to commit the registration duties, of which I have spoken, to one or more medical officers, who would act as his statistical colleagues, or as his assistants. In so vast a population (half a million, I believe, is

under Dr. Trench's charge) there would be many advantages in separating permanently the statistical and medico-legal duties from those of sanitary inspection and advice.

4293. Would the general organization of scientific inquiries and advisers have to be deferred until the Legislature had determined the extent of the areas to be adopted for sanitary administration?—I think not, for I have already shown that statistical and sanitary duties of a superior order might, even under present circumstances, be readily performed in areas of much wider extent than those of most of the districts now under the management of local boards. It would, I apprehend, be a much shorter course to enable the Government or perhaps the county authority to appoint officers than to consolidate at once local jurisdictions. But I think that Government interference if authorized should only be temporary or provisional. There is one important reason which I beg to submit for appointing the officers in the first place, namely, that the very information which in a year or two these officers would obtain concerning the physical topography and features and sanitary peculiarities of their districts, would afford the best possible guidance to the Legislature in determining the principles upon which improved districts should hereafter be constituted for sanitary local administration.

4294. What difficulties have resulted from the present variety and complexity of local sanitary jurisdictions?—I have repeatedly represented the anomalies and perplexities caused by the present jumble of sanitary authorities. The chaos seems to have been increased by the creation of two classes of sanitary authority, by the Sanitary Act of 1866. In my comments on that Act, I pointed out several sources of confusion, and other persons have followed me in exposing the defects of that piece of legislation; Mr. Hutchins of the Privy Council Office, for instance.

4295. Will you state when you published your comments upon that Act?—It was a reprint in Oct. 1866, from the Journal of Social Science. The pamphlet is entitled, "Comments on the Sanitary Act, 1866." I beg to leave a copy at the service of the Commission (*delivering in the same*). For instance, how unreasonable is the enactment that, while hospital accommodation is to be provided by the sewer authorities, the carriages which are to convey the sick to those hospitals are to be provided by the nuisance authorities. I admit that a local board may act as both a sewer and a nuisance authority. The sewer authorities are now to provide supplies of medical relief as well as hospital accommodation in the very districts wherein the nuisance authorities, that is the boards of guardians, have for the last 35 years had an organized system of infirmary and medical relief in full operation; and those very boards, that is the boards of guardians, under the Diseases Prevention Act, may be empowered by the Privy Council to extend this sanitary relief and accommodation during epidemics. Here, then, there are two sets of authorities, which it is well known are often in opposition, empowered to do the same work in the same district, each of course ready to throw off the responsibility and to charge the neglect upon the other. The sewer authority may provide hospitals, but it has no staff of medical officers to carry its powers into execution. The nuisance authority has the staff quite ready and daily at work, but it is not empowered to provide the accommodation. So in the important matter of registration, as well as in the established medical relief, the nuisance authority possesses the officers, the materials, and the sources of information, but its hands are now tied and the new sewer authorities or local boards are to do the work for which, in general, they possess neither machinery nor information. The new powers given to parish vestries have to my knowledge been pleaded by boards of guardians as the reason for not doing their customary duty as sanitary authorities. Satisfactory sanitary progress is next to impossible while there is this divided local responsibility.

4296. In what manner would you propose to combine those various sewer and nuisance authorities so as to consolidate local administration?—It is of course not within my province to suggest the legal methods of such combination or consolidation of authority; but I have already said that the spheres or areas proper for a more comprehensive sanitary administration would be more fitly determined after a scientific staff had been at work for a short time throughout the provincial districts. When those areas shall have been defined, I do not see why a principle which is in operation in the metropolis should not be extended to the provinces, namely, that every local board of whatever kind which may be in existence within any such extended areas should send delegates to the higher court which would be established for the sanitary management of that area. This would still leave many details of work to be done by the minor authorities in their own special localities. Or again, local committees might be appointed by a general district court, that is a court for the management of the whole area, to direct strictly local works, the cost of which would fall upon the inhabitants of the locality only. I imagine, not being a lawyer, that there would be no difficulty in harmonizing the fiscal and the official portions of such an organization.

4297. What is your opinion of the present medical department of the Privy Council as the completion of the general scheme of organization which you have suggested?—Notwithstanding the great and noble work which that department has done in sanitary administration, and is still doing, I do not think that, by itself and unless combined and consolidated with other departments of the Government which have sanitary functions, it ought to continue as the sole sanitary authority of the country.

4298. Do you think that it would be more efficient for general public sanitary purposes if it were connected with the Home Office department, a portion of which is the Local Government Act Office?—I should think not; I should be glad to see all those departments of Government which have to do with sanitary work, either sanitary inquiry or sanitary administration or sanitary works, combined in a single board of health.

4299. Do you mean something similar to the old board of health?—Something very much superior to that in every way.

4300. Which are the departments which you would propose to combine?—There are two main departments which at once occur to me, namely, the medical department of the Privy Council and the department of local administration under the Secretary of State.

4301. Do you propose that they should be combined?—Yes, for sanitary objects. I should hardly like to answer the question respecting any other central authorities unless I had more precise information with regard to the duties which they severally perform or superintend, but I know that there are several other central authorities engaged more or less in medical or sanitary work,—one especially of great importance, namely, the General Register Office in connexion with the registration of the causes of death. I think that that department should be represented in any general or central sanitary authority. So, also, ought the Poor Law Board in its medical department.

4302. I gather generally from your last two or three answers that you think that some central medical authority in London is necessary to complete the organization that you propose, and that it should be combined as much as possible with the Local Government Office?—I think I may say yes, although in answer to the last words of the question "combined with the Local Government Office," I would rather say that it should be combined with the Privy Council Department.

4303. I do not suppose you mean to imply by that that you see anything in the Privy Council Office particularly advantageous to the connexion of the medical council with it?—It appears to me that the Privy Council, with its able medical officers, has done more

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for the cause of public health than any public body in this country, and that, therefore, it is the very best of all departments to be at the head of sanitary action, it being aided by such other departments as have now sanitary work to do.

4304. (*Earl of Ducie.*) Would this improved sanitary organization which you have sketched out lead to any very great additional expense?—There would be an immediate increase of expense doubtless, but I believe it would be amply repaid by the saving to the country of the cost of sickness and mortality.

4305. Could you, do you think, in the country districts find medical officers competent to carry out the improved sanitary administration which you recommend?—I think that even now, the experience which many eminent officers of health have gained would qualify them for forming members of a new sanitary organization, and perhaps for completing it. If not, the number of scientific men who are entering upon that line of study and of practice is increasing every day, and I cannot doubt that in a very little time a sufficient number of men will be found quite capable of undertaking all the duties which would belong to such an organization.

4306. (*Mr. Hibbert.*) I did not quite understand whether, in combining the matters connected with health which are now under the Home Office and those which are now under the Privy Council, you meant to combine them under one or other of those departments, or whether you meant that there should be a new department, forming a public health department?—I should prefer the latter course, but I really do not feel competent to give a precise answer to that question, unless I knew more of the working of the central departments.

4307. You stated that medical men were not required now to give a certificate on the death of any person, but that they very usually did so; what course would you recommend should be adopted in any improved law with respect to that?—I would not subject medical practitioners to any additional compulsion. I think the present system in that respect is the best; they are morally and professionally bound to render the information, but I would not have them legally compelled to do it as in Scotland.

4308. At present the law is that some person present at the death or the occupier of the house is compelled to give the particulars of the death to the registrar; do you see any improvement upon that?—With respect to the deficiencies which I have already pointed out, I should say that, where sufficient information is not rendered by the medical attendant, it had better be supplied, on inspection, by a skilled officer of health and registration, or by his deputy. I think that would meet the whole difficulty of the case.

4309. In the case of a person dying who was not attended by any medical man at all, how is the cause of death certified?—There should be the evidence of inspection, and the inspection should be, in some respects, such as is the case all over the continent.

4310. But now that it is not necessary to have any such inspection, how is the cause of death ascertained in order to be placed upon the certificate?—It is sometimes not certified at all under the present system as I have already explained. 4,600 deaths occurred last year in the country, respecting which the causes were not even specified, still less certified.

4311. Still I find in the schedule to the Act that there is one column for the cause of death to be stated in the form of the schedule which requires the death to be certified, is that the form in which it is obliged to be certified by the registrar?—There is no compulsion to fill up that column by information certified by a medical officer.

4312. I want to know whether you can recommend any improved form for obtaining the cause of death in order that such a column should be filled up?—I thought I had explained the process which I would recommend for the better return of the cause of death. I think that if there were a public officer whose duty it would be to inquire into and to return that cause, there would be fewer omissions on the part of those whose duty it is to fill it up, and if, after all, such omissions occurred, he would be the officer to supply them.

4313. That officer could only be able to supply it, I presume, after having taking evidence as to the cause of death?—He would go to the house where the corpse lay, and make the best inquiries he could, and state the cause as nearly as possible; and if he conceived that the circumstances required a coroner's inquest, he would immediately inform the coroner of the district, and the cause of death would be legally and judicially investigated.

4314. (*Mr. Powell.*) Do you mean where there was a doubt as to the cause of death, or where there was a doubt as to whether the death was a violent one?—I ought to have used the word "suspicious" in describing the death which would be investigated by a coroner's inquest.

4315. (*Mr. Hibbert.*) You state that the death-rates at present are fallacious. I suppose you mean that they are fallacious in comparing one town with another; —they are not fallacious in comparing the death-rate of one town in one year with the death-rate of that same town in another year, are they?—I think the same sources of fallacy which I have pointed out in my previous answer would apply to successive observations in the same place, though perhaps not to the same extent as to contemporaneous observations in different places.

4316. Would you not have very much the same class of people living in the same place?—Perpaps so; but their ages might differ materially, and great movements of the population may have intervened.

4317. Have you given your attention at all to the places in which high death-rates prevail, for instance, Manchester, Salford, and Liverpool, and can you state any cause of the high death-rates in those three towns?—I believe the causes of those high death-rates have been thoroughly investigated by scientific local inquirers on the spot. I should be very sorry to give an opinion on that point after such clear inquiries and reports as have been made by Dr. Ransome and Dr. Morgan, which I think are full and satisfactory as to many of the causes of high death rates in Manchester.

4318. I understood you to say that you thought that there was some difficulty in providing county control for sanitary matters, owing to, in many instances, unions running into two different counties. I do not know whether you are aware that there are two bills now before the House of Commons, one providing for a county administration of finance, and the other providing for a county assessment, in both which bills those difficulties have been overcome?—Of one of the bills I was aware and I alluded to it in my answer; I was not aware, of the other, but I am glad to hear that such a measure is intended.

4319. If those difficulties could be overcome you would see no objection to having a county control over sanitary matters?—Not the least.

4320. (*Lieut.-Col. Ewart.*) What would be your opinion with regard to sanitary organization as to what should be the unit—should you make the ecclesiastical parish the unit of organization for sanitary matters?—It is a question that I am unable to answer. I am not fully aware of the difference between an ecclesiastical parish and a poor law parish. When I used the word parish, I referred entirely to parishes or districts which are rated separately to the relief of the poor.

4321. The ecclesiastical parish being represented by the vestry, would you make the union or the vestry the unit for sanitary organization? — By "parish" I mean that district which is governed by a vestry, whatever it might be called.

4322. And you would have the sanitary organization in connexion with that vestry?—The district governed by the vestry would be the unit to be combined for sanitary organization.

4323. What class of inspectors for sanitary pur-

poses would you think desirable for that unit?—The class of inspectors for extensive combinations of parishes or unions, concerning which I have offered some suggestions to-day, would be medical men of high education, of an education superior to that which has been hitherto demanded of the general body of medical practitioners. I may be permitted to say that that question is now before the General Medical Council of Education, which will be asked to provide a higher qualification for officers of health and other medical men engaged in various departments of the public service.

4324. But for the detailed inspection which would be under their general supervision, what would be your opinion as to employing say the county police?—My impression is, that the county police are a most valuable body, and would be very serviceable in the performance of such duties. My only question would be this, but perhaps I have not sufficiently considered that matter, whether the employment of the police in sanitary inspection would be repulsive to the feelings of the population of the country, although I have no proof of such a feeling existing.

4325. How far do you think that the coroners could be made available for carrying out the system of registration to which you have alluded, or how far could the two duties be combined in the same person?—That is a very important question indeed, and one which I have considered; but my impression is on the whole that the coroner should still continue to be the judicial authority, and that it would be better that the coroner should be aided by a medical officer of registration than that the legal and the medical functions should be combined in one officer; in other words, I do not think that a medical man would necessarily, however highly qualified, make the best coroner.

4326. You are aware that at present investigations in important cases are carried on either by the medical department of the Privy Council, or by the Local Act Office of the Home Office; do not you think that it would be often of advantage that you should have an important inspection of that kind made by two inspectors rather than by one inspector, which might be the case if you had a central office?—I can conceive that there would be cases where the opinion, after consultation, of two gentlemen, one, we will say, a physician, and the other an engineer, would be of great value, and their report would be better than the report of a single officer; but I think that, with such an organization of medical officers as I propose to be established in the country, there would be far less necessity for incurring the expense and trouble of sending one or two inspectors from the metropolis on all serious occasions of epidemic sickness: in other words the duties which devolve now upon the inspectors of the central office would be diminished by the organization which I propose.

4327. (*Sir T. Watson.*) I gather from the answers which you have given to the last questions that you would hardly consider in the sanitary organization of which you have been giving a sketch, that any part of it should be administered by medical men who are gaining their daily bread by their daily practice?—That is my opinion.

4328. You would have the sanitary organization consist of men who are trained for that purpose only, and who should be prohibited from what we call the practice of physic?—I would do so for the future, but I should be very sorry if any enactment were passed which had the effect of dismissing from office the men who, on other terms and with other tenures of office, are for the present doing so much good in the country. I would make any such regulations applicable to the future only.

4329. You are familiar, as the Commission are aware, with the sanitary enactments which are at present in force; do you think that they recognize almost all the preventible causes of disease, or that there are any which are not recognized by those Acts?—There are a very great many that are not recognized at present.

4330. So that the inquiry is not simply how to provide against the evil, but what the evil is that is to be provided against?—That is my opinion, and for that reason I commenced my evidence by showing how extremely important it was that we should have a better registration of sickness and its causes in the country as a foundation for sanitary organization.

4331. Is it not extremely desirable that the presence of any new cause of preventible disease should be instantly discovered and announced?—It is of the utmost importance.

4332. Have you thought of any plan by which it could be secured that the presence of disease in a place, or the threatening of disease, should be at once discovered, reported, and a remedy provided?—I intended that a previous answer should have suggested the importance of such an arrangement. I believe that if there were a medical officer of health and registration in every large district, to whom all deaths and cases of sickness were returned promptly by those persons whose duty it is or would be to record them, he would be in a position immediately to announce the prevalence of any serious cause of injury to the public health and so to promote its removal.

4333. (*Dr. Acland.*) I think I gather upon the whole from your evidence that your wish is to have one great central office, and a complete system of competent resident inspectors over considerable areas?—That is a very fair sketch of the plan which I would suggest.

4334. One central office comprising all the important health departments now existing, others if necessary, and in addition to that competent inspectors?—Yes, local inspectors, medical officers of health and registration.

4335. Could you give the Commission any opinion as to the value of the poor law system of this country for such a purpose?—I believe that no efficient sanitary system could be established without making use of the poor law medical staff of this country. I have thought very much on that point. Already the medical officers of districts and workhouses are brought face to face, not only with the results of unsanitary conditions, but with the causes, and I think they ought to be employed very largely in sanitary inquiries. I mean to say that the poor-law medical officers ought to be made use of very largely in any such system as I have suggested. I would place them in connexion with, though not exactly as subalterns to, the local inspector. I would require them to render him all possible information, working with him and acting as his assistants when, owing to the size of his district, he could not accomplish every particular of sanitary inspection. They would in fact be the assistant sanitary officers of the large district over which there would be a medical officer of health and registration, as local inspector.

4336. It has of course been noticed by you that the poor law officers of this country in the rural districts generally are in fact the sanitary officers?—They are at present, that is the fact.

4337. Are they not inspected by both legal and medical inspectors at this moment?—They may be, but not in the way in which they would be aided and superintended by the organization which I propose, which would perform duties different altogether from those of the present poor law inspectors.

4338. Would it be troubling you too much to say what are the functions which you think should be committed to those medical inspectors?—I should be unwilling to make a statement now which might be considered to represent completely my views respecting the duties of those officers, but I should be willing, time permitting, to prepare such a statement for the Commission.

4339. It would seem to be very desirable, in order to get precise notions upon this subject, that we should realize exactly what should be the functions of inspectors of this kind. There are at the present

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moment, as you are aware and as you have stated, many recognized sanitary wants; the question is whether the inspectors are to be the supreme judges of the mode of meeting those wants. They might superintend the registration of deaths, the registration of disease, the inspection of food, and the like. Would you add to their duties the supervision of medico-legal inquiries?—Not as coroners, but as officially affording the information which I have said is so often necessary respecting suspicious deaths, after a careful examination of the body.

4340. Is there reason to believe that at present the medical officers who are appointed by the poor law all over the country are appointed with a view to discharging duties of that kind?—I think they are not; that is not their main function.

4341. But, notwithstanding that, is it within your knowledge that, although not appointed for that purpose, they practically are constantly required to discharge that duty?—Not, I imagine, all the duties which I have suggested, or which you yourself have suggested, but they are qualified for, and may be employed in, many useful sanitary duties, and they might be trained for the performance of duties of a higher kind by acting as assistants to the superior officer, whom I propose to be appointed over a very much larger district.

4342. Is there any published statement as to the duties to be imposed upon such inspectors?—I have suggested a number of duties to be done by him, but I am not aware that a complete category of the duties has yet been prepared. Already we have two important official papers on the subject; one by Mr. Simon, prepared for the late General Board of Health in 1855, and entitled, "Instructional Minute relative to the "Duties and Qualifications of Officers of Health;" and the other paper is a letter from Dr. Farr to the Registrar General, which is contained in the 27th Annual Report, in which he treats of those duties, with some others, which would belong to a medical officer of registration. The combination of those two classes of duties would make a tolerably complete list of the duties which should be required of this officer of health and registration, whom I propose for every large district in the country.

4343. I think I gather that your system would be to have paid officers of health and registration in every district?—In every large district.

4344. Those being persons educated for the purpose and not in practice?—Yes, but I would always provide that existing tenures of office should be respected.

4345. Do you think that persons not engaged in practice would be the best class of persons, or a good class of persons, for pathological and toxicological inquiries?—That is a very important question, and I am glad that you have given me an opportunity of expressing my opinion on the point. I consider that no one should fill such an office as I have proposed, unless he had been engaged in the curative practice of his profession, and particularly in those scientific pathological studies which best prepare a man for practice, for a sufficient period before he were permitted to undertake the duties of a sanitary officer. And I would add to my answer, that I do not think the appointment of physician or surgeon to a hospital, or to any great institution of that kind, wherein men of high ability give their opinions for the benefit of the poor, would be at all incompatible with the duties of an officer of health; but I do think that the duties of curative practice among private patients are incompatible with the proper and independent functions of such an officer as I propose.

4346. You see a consequence that would follow from that. If the officer of registration and health be also allowed to be physician or surgeon to a hospital, and allowed therefore to exercise his high skill upon the poor, you think that it would be improper that he should exercise the same skill for the benefit of those who could pay for it?—I think that his position would be altogether altered directly he went into the field of competition for private practice; and I would beg to illustrate my opinion by referring to the position of the distinguished medical officer of the Privy Council, who to this day is a surgeon to St. Thomas's Hospital, and performs the duties of that appointment with great *eclat* and benefit. I should be very sorry if any enactment were passed which would deprive St. Thomas's Hospital of Mr. Simon's advice, but I understand that Mr. Simon does not practise privately, and I think I am justified in saying that he would decline to undertake any private practice whatever, while medical officer of the Privy Council.

4347. It may be of comparatively little consequence in a great metropolis, but it is well known that the amount of operative surgery in provincial districts is not great, and this provision might make it impossible by law, might it not, for the best surgeon, it might be of a country hospital, to operate upon any excepting poor persons?—The Commission will understand that I answered the original question conditionally. Supposing that there were an officer already, either a physician or a surgeon, at work in any hospital, that occupation should not be a disqualification for his undertaking the office of health and registration, provided he consented to relinquish private practice. At the same time I am bound to say that such cases, I believe, would be very rare indeed in the provincial districts. Dr. Trench, of Liverpool, who is debarred from private practice, has assured me that he is satisfied to be altogether removed from the necessity of attending to private practice, as he felt that it would be quite incompatible with his public duties.

4348. Is he physician to the Liverpool Hospital?—I believe that he is not; but he does not undertake private practice. I do not suppose that all the officers of health and registration whose appointment I am recommending would be physicians or surgeons of hospitals, far from it. I think very few would be. The question is, whether they should be absolutely debarred from holding such hospital appointments, and I am disposed to think that they should not.

4349. I notice that, in your valuable work on State medicine, you make an estimate of the number of districts and the number of such officers as would be required, and you perhaps may remember that that number is stated at about 300 for England and Wales; or one for each population of 60,000?—It is so; but on further consideration (that work was written 15 years ago) I recommend that the districts should be larger, and I think that a district containing from 80,000 to 100,000 persons might be very well inspected by such an officer as I have proposed.

4350. You are known to have paid great attention to the system of State medicine on the continent; would it be convenient for you to offer now to the Commission any sketch of the best sanitary organization in foreign countries?—I should find some difficulty in answering that question, if I were required to state which of the continental systems I think the best, for I consider that they all have serious defects, and are besides in themselves all of them more or less inapplicable to this country. The office of *kreis-physicus*, or district physician, was first instituted in various states of Germany more than a century ago, and it still exists; but it is allowed to be exercised by persons who are in private practice, and the result, as I am informed and as the general medical council is informed, is that the duties are not so satisfactorily performed as they would be were those officers debarred from private practice. I am sorry to say that I cannot give the Commission any sketch of foreign systems immediately. I believe it to be contained in an incomplete work which Dr. Acland has put into my hands, which contains replies from some of the most eminent men in Germany on that subject. From those replies it would be easy in a short time to draw up a sketch of the duties which the German district physicians perform.

4351. You have alluded to a document which I have just shown you; could you say whether it would be easy for the medical council, which is charged with superintending the future education of the medical profession, to lay down such an education and quali-

fication, until it knows what the Government is likely to arrange with regard to the areas of inspection, and therefore the salaries to be paid to those gentlemen, and therefore the different kinds of qualifications which may reasonably be required of them?—I should have thought that all the necessary conditions of qualification for a high sanitary or medico-legal office could be judged of and determined by the general medical council independently of any action of the Government at all.

4352. I would suggest this difficulty, that if the medical council established a high class of State medicine diploma and tempts young men to follow that line of life, and then this Commission or the Government should declare that no such office should exist and no such salaries be forthcoming, it would be a kind of breach of faith with those young men?—I imagine that a young man would enter upon that line of study with very much the same views as one who goes to the university and lays himself out, if he is intelligent, industrious, and ambitious, for the highest honours which the university can bestow upon him, and yet it may be that in afterlife he has very little opportunity of turning those high honours to account. I do not imagine that many are debarred from obtaining the honours from a doubt in their minds as to the possibility of deriving profit from them. They go in for the highest education and the highest honours that they can obtain, and no doubt they are generally rewarded, but far from always.

4353. Therefore the present voluntary system would probably answer in your opinion?—I should say so,—supposing always that a high and special qualification were instituted, and that the terms and tenure of office were properly settled.

4354. Would you compel the local authorities to appoint and to pay sanitary inspectors?—I have not made up my mind as to the sources from which the remuneration of those officers ought to come. I think that the county rate upon the whole would seem to be the most proper source for their remuneration; certainly not a union or a parochial rate; it should not be charged on a merely local rate; it should be an expense distributed over as large an area as possible; but, whether it should be a charge on the county rate, or on a national rate to be made for that purpose, or upon the consolidated fund, is really a question for a politician rather than for a medical man to answer.

4355. Have you considered the question of the amount of salary?—I have. I think that such officers as I propose ought to be remunerated at the rate of about 1*l.* annually for each hundred of the population, which is a tenth of a florin per head; but whether that remuneration should be in the form of a fixed salary only, or whether a part of it should be constituted by certain fees to be paid to them, as in Germany, for the performance of certain duties, I am not sure. I am inclined to recommend that a moiety of the proposed remuneration should be in the form of a fixed salary—say 500*l.* for an extensive district—leaving the remainder to be made up by special payment for special work.

4356. Do the so-called certifying surgeons discharge sanitary functions in this country?—They are expected to do so by a circular of Mr. Inspector Baker's, but it is now a question whether they ought to perform those functions or not. Two different statements are before me, within the last 24 hours, on that very point. I believe that they have sanitary functions to perform, and I believe it is important that they should perform them, but whether to the extent required by Mr. Inspector Baker or not, I do not presume to say.

4357. Are you aware that the guardians have at present power to obtain sanitary reports on any district, and to pay medical officers for so furnishing them?—I am aware of that.

4358. Do you know whether they exercise that function?—I believe very rarely; but I have heard of their so doing.

4359. I think I may gather from your evidence and other evidence that we have a great deal of organization, the principles of which require reconsideration as well as rearrangement?—I do think so.

4360. We have a considerable machinery, very complicated, and often conflicting?—It is quite so; and I would add, that there are a great many persons employed in various public functions within a wide extent of country whose total remuneration for those duties as now paid, would go a very great way towards the fund which would be necessary for remunerating the proposed medical officer of health and registration.

4361. From your great knowledge of both foreign and home arrangements of this kind, do you think that there is any prospect, without completely recasting our system, of getting a reasonable sanitary organization established in this country?—I do not think it possible without that.

4362. (*Mr. Richards.*) You have spoken of an officer of health and registration; do you mean the county inspector to fill that office?—I am now proposing only one class of officers, and they would be medical officers of health and registration. Each officer might superintend two or more registration districts, and might be appointed by the county authority or by a reformed system of local boards. I prefer the county authority, because that is an established authority, and can at once act, I presume.

4363. To take an example: in a large town of 60,000 inhabitants, would the gentleman whom you would appoint as the medical officer of health take his instructions from the county authority?—Provided that the county authority were fortified by including representatives from the local boards or from the ratepayers.

4364. Do you think that it would be likely that an officer appointed in that way would work so harmoniously with the local board in a large town as if his appointment came from the board itself?—Perhaps not; and I would make an exception to my last answer in the case of very large towns, which are sufficient of themselves to employ the entire time and services of one medical officer of health and registration. In such cases I do not see any necessity for depriving the governing body of that town of its present powers in such an appointment. I have been speaking more particularly of districts which do not possess the means of governing and managing a large population.

4365. Will you give us a definition of a large population?—I have said that I thought that the average population entrusted to one of those officers should be from 80,000 to 100,000.

4366. Assume the case of a town of 60,000?—If in that town at present there were an officer of health usefully at work I would by no means displace him.

4367. Assuming that there was a town of 60,000 inhabitants without an officer of health, would you by your scheme give the appointment to that town, or would you give the appointment to the county?—I would give the appointment to that town solely, if the town were willing to raise a salary which would render that officer independent of private practice; and my reason for naming the higher amount of population is, that the pecuniary burden of the system would be less felt in a larger population, whilst in a population of only 60,000, the charge might be felt to be too onerous.

4368. Would you insist in all cases that the registrar of deaths should be a medical man?—Certainly not.

4369. Assuming that information were brought as to the death of a person in the district, how would you provide for the information that I understand you to require of the registrar previous to certifying a death where full information had not been given by the medical attendant?—The registrar would report that case at once to the medical officer of health and registration, and the latter would make the proposed inquiry.

4370. What chance would there be of an examination of the deceased by the local inspector, assuming that he had a district of 100,000 covering a large area

of ground?—In the majority of cases he would be able to perform the inspections; but I will suppose the case of his being at one end of a large district when he might be summoned to inspect a death at the other end. I would say that the difficulty in such a case would be met by employing the medical officer of the union as his deputy until he were able himself to confirm or verify the report.

4371. Would you have the medical officer of the union subject to instructions from the local inspector?—I would have him form part of the same system; he should co-operate in every case with the district officer of health and registration; he would be in the position of an assistant. As has been shown in answer to the question asked me by Dr. Acland, he is now virtually a sanitary officer, and he would not be deprived of, or prevented from exercising, any of those sanitary duties under an improved system. He would be assisted in performing them, and he would himself render further valuable assistance to the higher officer whom I propose.

4372. Would you in every poor law district have the medical officer of the union a part of your machinery?—Yes, I would make him a part of the organization. I would collect a certain number of medical relief districts under one medical officer of health and registration, an aggregate of districts for medical relief and an aggregate of districts for registration. Two classes of facts, as I have before explained, would then come under the local supervision of a highly qualified officer, who would make use of them for sanitary purposes.

4373. Would you make it incumbent upon the medical officer of the union to report to the local inspector upon all cases of sickness as well as mortality?—I would, certainly. That is a most important feature of my plan.

4374. As I understand, the base would be the medical officer of the union and the registrar, both reporting to the district inspector; whose duty would it be to make returns of sickness and mortality?—The returns of mortality would be made by the registrars to the medical officer of health and registration, and the returns of sickness would be made to him by the poor law medical officers of the district, and I would submit that other returns of sickness might be collected from public institutions, hospitals and dispensaries, which might exist within the district.

4375. Do you think that public advantage would necessarily be gained by making the medical officer of the union the registrar of deaths?—I do not think it will be attended with any public advantage.

4376. Assuming the inspector had had returns of an undue amount of sickness made to him by the medical officer of the union, and he made representation to the district authority, and they were utterly indifferent to his representations, would you give him any power to act?—I would not; I would particularly guard against the idea that I wish to institute a medical despotism in this country. I believe that the carrying into effect local sanitary measures must rest with the local authorities themselves, under the control of such central department as has been suggested to-day; but I consider that the functions of the high class officer whom I recommend would cease when he had given his advice, and the responsibility of acting upon that advice would rest with the authorities.

4377. Assuming that the board of guardians were constituted the local authority in rural districts, and they were utterly indifferent to his representations, would you still be content that his report should be given to the guardians, and that no other action should be taken by him?—I should not be content with that, because I propose that his report should be forwarded in every case to the central authority; and the central authority, on receiving information that the advice of the officer had not been attended to, would probably proceed, as the Secretary of State now proceeds, to enforce the provisions of the Sanitary Acts, whatever they might be.

4378. In reply to one question of Dr. Acland's as to the number of officers who are now in one way or other engaged officially through the country, you say that you think a consolidation of their duties might be effected without any great increase of public expenditure; will you give us a few examples of the officers to whom you refer?—Without pledging myself to the completeness of my answer to this question, there are several kinds of public duty now performed, which I think in time might be consolidated with great public advantage and economy. The one is medical evidence, after skilful and thorough *post mortem* examinations, and perhaps analyses, at coroners' inquests, so far at least as those inquests are held on the bodies of the poor and the unknown of the population, which constitute the great bulk of the persons upon whom inquests are held. I would not displace the medical attendant or the private practitioner from any duty which he may at present perform at those inquests, but I think it would save public money if certain medico-legal duties, which are now paid for out of the rates, were committed to the proposed officer or his deputy. That is one class of duties. Another would consist in duties which are performed by certifying surgeons of factories, and I think that, on the vacation of office by any one of these gentlemen, all the sanitary functions which he is now expected to perform, and perhaps his medico-legal functions also, might be performed under such an organization as I propose. Then there are also scientific duties to be performed in every populous district, with respect to the food of the people. I do not mean mere inspection of markets and slaughter-houses and pigsties, because such places may be inspected and reported on by any intelligent person, for instance, a policeman. But in the analysis and microscopical examination of foods and drinks and medicines, a skilled officer, protected by public appointment, is quite necessary for the public health. It might not be possible for the superior officer of health to undertake these examinations in a town of vast size and population, as Manchester or Birmingham. In such places, the analytical duties might be left to a county analyst, who perhaps need not be a medical man. But in ordinary provincial districts, where there might be no analyst appointed under the Adulteration of Food Act, it would obviously be an advantage if the proposed medical officer of health and registration, or one of his deputies, could perform these duties. Again, I have elsewhere shown how certain local duties in the department of public vaccination, especially the inspection of vaccinated patients for purposes of certification and registry, for the advantage and security of the public, might be committed to the proposed superintending medical officer. By such a measure, much of the labour bestowed on this department by the inspectors of Privy Council might, I believe, be spared. I am well aware of the very great improvements in public vaccination which have been effected under Privy Council inspection. I have no wish that such inspection should be superseded, but it might be aided by skilled and independent local inspection, and thus a numerous staff of central inspectors might be rendered less necessary. Another class of public functions which I think might be committed to such officers are such as are now, I believe, performed, under the Contagious Diseases Act, in garrison towns and sea ports, a system which is being gradually extended to other towns, and the principle of which I hope may be extended to the civil population of the country generally. That would bring in another very important class of duties to be performed by the proposed officer or his deputy. I am not prepared at present to extend this list.

4379. Has your attention been directed to the possibility of the district or county inspector having the supervision of lunatic inspection?—It has. I think that the duties which are now performed by the visiting physician to the justices might well be performed, and indeed much better than at present, by the proposed officer. I might have added these duties to those mentioned in my last answer.

4380. I understand it to be one condition of your

recommendation that the Registrar General's department should be combined in future with what is usually known as the local government department and the Privy Council department?—The sanitary functions of the Registrar General's department, and those only.

4381. (*Mr. Powell.*) You stated in an early answer that many of the officers of health appointed under Mr. Torrens' Act are not medical men. Are you aware how many have been appointed under that Act?—I am not; but I have heard of several not having a medical qualification, who were held to be officers of health under that Act.

4382. Do you mean that they were appointed by the Act?—The Act has specially omitted the medical qualification. It was proposed by some members of my profession that the officer of health should be a medical man, but Parliament declined to endorse that recommendation, and now the officer of health may be either a medical man, or he may be a sanitary inspector, as it is called, or an inspector of nuisances. I am informed, upon what I consider to be good authority, that many such inferior officers are officers of health under this Act.

4383. But your mind runs entirely to the special provisions of Mr. Torrens' Act of last session, and not to the general provisions of the other Acts of Parliament on the subject?—My remark applied solely to Mr. Torrens's Act.

4384. Under the Public Health Act, the officer of health must be a qualified medical practitioner, must he not?—He is there called the medical officer of health, but that term was purposely altered in Mr. Torrens's Act; in the latter he is only called officer of health, and it is not necessary that he should have any medical qualification whatever.

4385. The words of the Public Health Act in the 40th section are these: "And be it enacted that the "local board of health may from time to time, if "they shall think fit, appoint a fit and proper person, "being a legally qualified medical practitioner or "member of the medical profession, to be and to be "called the officer of health." The word medical has been imported in conversation, but it is not in the Act?—I submit to that correction. I meant that it was expressed in the Public Health Act that he must be a medical practitioner or a member of the medical profession.

4386. You think that any person acting as an officer of health ought to be a duly qualified medical practitioner, and you regret the relaxation introduced, to a certain extent, by Mr. Torrens's Act of last session?—I cannot answer that question quite as you might expect, for I have already said that I consider it fortunate that a medical qualification has not been required in Mr. Torrens' Act, because the want of such a qualification will make it very much more easy to deal with those inferior officers in any improved medical organization under officers who may hereafter be appointed over wider districts. I will explain myself further. By Mr. Torrens' Act, every town of 10,000 inhabitants must appoint an officer of health. I consider that if every officer so appointed was to be a medical man, the Act would raise up a body of medical officers of health in the country having vested interests, whom it would be difficult afterwards to reconcile with such a reformed and improved system as I recommend; and I therefore consider, although I am aware that my opinion is opposed to that of many medical men, that it is a fortunate thing that the medical qualification was not insisted upon.

4387. At present the law then now stands thus: that in all towns above 10,000 inhabitants there must be an officer of health, not necessarily a medical man?—Exactly.

4388. But under the Public Health Act they may or may not appoint an officer of health, but the officer appointed under those former Acts must be a duly qualified medical practitioner?—Quite so.

4389. You stated, and in that you correspond with Dr. Trench of Liverpool, that it would be well to appoint colleagues or subordinates; how many would you suggest for such a town as Liverpool?—When I said that if a medical officer of health and registration, or any number of such officers who might be considered necessary for a town of the size of Liverpool, were appointed, I meant that they would be in the light of statistical assistants to Dr. Trench. It was a conditional answer. I did not propose positively that he should have so many assistants, but that if the proposed staff of officers which I recommend were appointed, they would be in the relation of assistants to an officer in Dr. Trench's position over half a million of persons.

4390. But is it part of your scheme that in such a town as Liverpool Dr. Trench should act alone, or that he should have colleagues or subordinates in so large a community?—I believe that it would be quite impossible in so large a community for Dr. Trench to perform all the duties which I propose to be performed by those officers; therefore I am sure that he must have assistants if that plan were fully carried out.

4391. You said that the district inspectors should be medical men of high education; of course we assume that they would be men of superior education, but their education would rather be of a special character than of a very high character?—It would; it would be both high and special. For instance, in physiology and pathology they would require to possess more than ordinary qualifications; but then in addition to those qualifications in physiology and pathology, they ought to possess certain special qualifications, particularly a thorough and practical knowledge of hygiene and sanitary laws.

4392. Do you propose that the central authority should have itinerating inspectors medically educated?—I very much question whether the central authority could act beneficially without a few such inspectors, but I think only a few would be necessary.

4393. What number, speaking roughly, would you suggest?—To take the present constitution of the Privy Council Office, I believe there are at least four permanent medical inspectors, and I think those four gentlemen, or whatever number may now be employed, would be quite sufficient as itinerating inspectors.

4394. I understand you that you consider the duties of the medical representatives of the central authority would be rather moral and suasive than coercive?—I consider that, on the representation of an inspector, the central authority ought to have power to compel the local authorities who may have neglected the advice of their district officer to do their duty.

4395. You leave the medical representative with coercive power behind him?—Yes.

4396. And you would place the appointment of those gentlemen in the hands of the Government?—Yes.

4397. Both of the district inspectors and the officers of the central department also?—I would leave, I think, to the Government the appointment of the first medical officers of health and registration, but these ought ultimately to be chosen either by the county authority or by reformed local boards. I particularly retain these two alternatives, for I am not sure which would be best.

4398. Do you think that the central authority ought to have the power of defining the duties or the salaries of the district inspectors?—I think that it ought to have the power of defining the duties, and I think there should be some general rule with regard to the salaries.

4399. Would you invest in the central authority the power of fixing the minimum?—I think it would be well that it should have the power of insisting upon a minimum.

4400. Would you empower the central authority to dismiss?—I would, and I would give the power of dismissal only to the central authority.

4401. I think you have already stated that you would ordinarily make the district coincident with the county, and that payment should come from the county rate?—That seems to be upon the whole the

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best plan, always supposing that the county would be divided into districts, according to registration districts, single or grouped or divided; but I am aware that this is a question still open to consideration.

4402. As regards the smallest medical authority, using the word small with reference to area, I think you recommend that he should be the medical officer of the poor law guardians?—That officer would continue to be what he is now, a sanitary agent.

4403. If there were a local board appointed for sanitary purposes, independent and irrespective of the guardians, would you place him for sanitary purposes under that local board, and for poor law purposes under the guardians?—I am hardly prepared to say how such divided responsibility would work.

4404. Does not that suggest very serious difficulty in the employment of the medical officer of the guardians for sanitary purposes under a sanitary board?—I do not think that the difficulty would be insuperable.

4405. Do you think that one man could well serve two masters?—I believe that at present the medical officers of unions have certain duties to perform for which they are not responsible to the guardians, but I am not sure.

4406. At present you know that the guardians are the nuisance authority, and it is as the servants of the nuisance authority that they have their sanitary powers?—Yes. I cannot speak now from precise knowledge, but I believe that for some of the more important duties, for instance, vaccination, they are not wholly responsible for the performance of those duties to the board of guardians. I speak under correction.

4407. But, assuming that there is at the present time in some exceptional manner a division of authority over those medical gentlemen and no inconvenience arises, it by no means follows that considerable inconvenience would not arise if you were to increase their duties and place them under two different governing bodies?—Perhaps there might be some such inconvenience; but it appears to me that their sanitary duties would form a class of functions so distinct from their ordinary duties as medical attendants of the poor, that while they were performing the one for the board of guardians, they might perform the other for the amended sanitary authorities.

4408. There would not necessarily be any communication between the Poor Law Board and the Sanitary Board, and it might occur at some given hour of the day that the board of guardians might desire the medical gentleman to perform a function in their service, and the Sanitary Board might wish at the same hour of the day that the same gentleman should perform sanitary functions?—That would be extremely inconvenient, but I imagine that the supposed difficulty might be averted by employing the medical relief officers to perform such sanitary duties and in such manner as might be compatible with the duties which they owe to the board of guardians.

4409. Then you would make the board of guardians the primary authority, so to speak, and the sanitary authority would come in the second rank?—I think certainly so, because the ordinary primary function of those officers is that of medical attendants on the sick poor. I do not propose to interfere at all with their duties to the board of guardians or to the public in that respect. I propose to commit to them some more sanitary functions than they now possess, but whatever duties of that kind might be entrusted to them, would be performed in addition to their medical relief functions, and they would be responsible for the execution of the latter to the sanitary authority.

4410. Still you would relegate their sanitary duties to the second rank rather than place them in the first rank?—I am quite ready to accept that mode of describing their intended position.

4411. Who do you intend should act as certifying surgeons under the Factory Acts?—I would not interfere with present certifying surgeons at all. If the medical officer of health and registration or his deputy had time enough to devote to the particular functions which are now performed by the certifying surgeons of factories, I think it would be well to transfer their duties to him, on their vacation of office.

4412. Has it not occurred to your mind that the certifying surgeon must be a gentleman who is always at hand and always ready, and that the child whom a parent desires to employ in a factory must be inspected almost immediately, otherwise the child may lose his appointment in the mill?—I understand, but I may have been misinformed, that the children who are candidates for factory work have to apply at certain specified times, say, twice or thrice a week.

4413. But if you enlarge the area, those specified times must become few, and that would be attended with considerable inconvenience to the population who are dependent upon the children's wages for their daily food, and to the manufacturer who is to be supplied with hands in order to conduct his enterprise?—In any such case where a district was extensive, and where the privileges of labour would be interfered with by requiring the candidate for labour to go to a great distance, I think it would be undesirable that the medical officer of health and registration should himself perform those duties. But he might be assisted by official deputies, namely, the poor-law surgeons.

4414. You desire, do you not, that each case of disease should be reported?—Yes, in a tabular form, not each separately. All cases of sickness would be returned, and the cases attended by each medical officer would be at once tabulated, and in case of any serious epidemic disease, it would be immediately reported to the medical officer of health and registration of the district.

4415. You do not contemplate, I presume, any interference with the freedom of action on the part of private individuals as to their selection of a medical man?—Not in the slightest degree.

4416. Is it your proposal, that where a death occurs in any house a strange medical man should attend and examine the body beyond the private attendant on the family?—That is not my proposition. I propose that there should be such special inspection and visitation only in cases where the return of the cause of death was absent or unsatisfactory. Suppose, for instance, that the medical attendant refused to certify the cause of death, as is not uncommon now, in such a case the public officer would be called in and would be required to examine and report the probable cause of death.

4417. To whom do you propose that this report should be made—to the district inspector?—The medical officer of health and registration, or his deputy, would report the cause of death to the registrar, or refer the inquiry to a coroner's inquest.

4418. What state of the law should you propose as regards permission to bury; should you allow burial to take place before the report had been made?—I have not fully considered that point.

4419. But you must bear in mind that if you have a complicated system great inconveniences might arise, and that those inconveniences would be extremely serious in such a matter as interment?—I think that the present law meets that difficulty tolerably well. I believe that by the present law (I speak under correction), if a clergyman buries anyone without a certificate from the registrar, that certificate must be supplied within a given time afterwards.

4420. You have recommended that the medical officer of the guardians should be the medical officer for your smallest subdivision. I presume that you contemplate having by the side of him a sanitary inspector of an humbler class?—I suppose the inspectors of nuisances would still act. It would be very important that they should continue to act under a better system, unless the police were employed for the same duties.

4421. (*Lord Robert Montagu.*) From this Memorandum on State medicine which I have before me, (*See Appendix*, p. xvii.) and from your evidence, it appears that your medical inspection is to consist in a minute investigation into the local circumstances

which might cause or which might evidence the existence of disease?—Certainly.

4422. Is there not some investigation required prior to that; must we not also know the physical causes of disease generally, irrespective of localities?—Certainly; and on that account it would be necessary that the district officer of health and registration should be a very well-educated man, and one who had had considerable experience in detecting causes of disease.

4423. The district officer would only have it in his power to compare those data and those statistics which occur in his district?—Under such an organization as I propose, all the information collected throughout the country would be at the service of every medical officer of health and registration within it; he would form part of a great system of sanitary inquiry, and he would reap all the advantages of the information to be obtained by that system.

4424. Did I rightly understand you to say that you would have no central inspection?—I certainly never intended to say so.

4425. You would continue the central inspection or investigation which is now conducted by Mr. Simon and the Privy Council Office?—Yes, that was my idea, and I see no reason either to add to the number of such inspectors or to diminish them.

4426. Mr. Simon's chief work consists, does it not, in investigating the general causes of disease?—Yes.

4427. Do you suppose that any district inspector would have been able by the knowledge at his command to have discovered that which Mr. Simon published in his Report to the Privy Council in 1868, namely, the relation of phthisis to the want of drainage in the subsoil?—I do not suppose that every medical officer of health and registration would be fortunate enough to discover every such great principle, but I beg to say that the very observation to which your lordship referred had been made in one at least of the provincial districts before it had been drawn as a general principle by Mr. Simon; and I believe that Mr. Simon's valuable labours and discoveries would be greatly facilitated and promoted by the information which he would derive from those medical officers of health and registration who, as I have suggested, should be required to forward their reports to him.

4428. Then it appears that you consider it absolutely necessary that in order to ascertain the sanitary condition of localities we should know generally the causes of disease?—Certainly.

4429. And that every measure should be taken to extend the investigations by some officer or officers into the general physical causes of disease?—I do think so.

4430. (*Dr. Acland.*) One of the subjects specially delegated to the Commission is the control of buildings. You have paid great attention, have you not, to the condition of agricultural cottages?—Some little attention.

4431. Have you anything to suggest to the Commission on that subject as to their supervision or construction, or otherwise?—I have simply to suggest that they should be subject to the same kind of supervision as that to which lodging-houses are now subject. I think it is of the utmost importance, in the present state of labourers' cottages throughout the country, infamously crowded as they are now, to the great detriment of health and morals, that they should be subject to a supervision.

4432. Do you think that the guardians as now constituted through their medical officer, and with their power to obtain paid sanitary reports, could easily exercise such supervision?—Perhaps they could, but I beg leave to doubt whether they ever would.

The witness withdrew.

(29.) William Farr, Esq., M.D., F.R.S., examined.

4433. (*Chairman.*) I think you are the superintendent of the statistical department of the General Registration Office?—I am.

4434. And you were assistant to the Registrar General in making the census of 1851 and 1861?—I was.

4435. Are you also a member of the Bromley local board?—I am.

4436. Will you be so good as to give the Commission a short account of the present subdivisions of England and Wales for registration purposes?—I will give a summary of those divisions as they were returned in the census of 1861, corrected, however, as far as the registration districts go, down to the present date. We divided England into 11 divisions, consisting of 52 counties, the divisions being merely groups of counties for special purposes of registration. The country is divided into 640 districts, and in each district there is a superintendent registrar who is generally clerk to the board of guardians.

4437. Are those last districts unions?—They are generally coincident with the poor law unions. By a recent Act there has been an alteration particularly affecting the metropolis in the connexion between the registration districts and the poor law districts. Of the 640 superintendent registrar's districts in England and Wales, there were, until recently, 38 temporary districts consisting of parishes and places in which poor law relief was administered under local Acts, and not under boards of guardians. Ten of those temporary districts were in London, as Marylebone, Pancras, Islington, and other large parishes. By the Metropolitan Poor Act of 1867, the 30th of Victoria, chapter 6, it was enacted that from a day to be named by the Poor Law Board the relief of the poor in each of these parishes, &c. should be administered by a board of guardians under the Poor Law Acts. By another Act of the same session, the Poor Law Amendment Act of 1867, powers are given to the Poor Law Board to alter the local Acts relating to the poor out of the metropolis. Effect has been given to these provisions of the statutes referred to, and temporary districts in the metropolis have ceased to exist, so that there is now or will be a very close coincidence between the poor law division of the country and the registration division of the country. I would further state that there are 2,202 sub-districts; each sub-district has a registrar who does the work of registration, and the superintendent merely examines his entries and exercises a general supervision. The registrar is appointed by the board of guardians, and paid according to the number of births and deaths that he registers. The registrars of these temporary districts, until this Act to which I have referred came into operation, were appointed by the Poor Law Board, and the superintendents were appointed by the Registrar General, but that patronage has been taken away and it is now entirely in the hands of the guardians.

4438. Can you tell us how those sub-districts are formed? what guides their formation?—They are made up of a certain number of parishes. The further subdivision which has been referred to, and which is well known, is the subdivision into parishes or places consisting of 16,160 parishes or places. Those parishes or places in the south of England are always exactly represented by what is called the old parish or place maintaining its own poor. In the north of England, when you get to Yorkshire or Lancashire, and further north still, to Cumberland, and so on, that coincidence no longer exists. There the township and the parish are quite different things. The township is a place maintaining its own poor, having a separate rating area, and corresponding therefore in those essential features with the parish in the south. The parish is a group of townships. In taking the census we found that those parishes were too large. And then they are irregularly formed as to size.

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4439. How are the 2,202 sub-districts related to parishes?—They are mere agglomerations of parishes as a general rule, and on framing them a certain number of parishes have been put together, but not invariably. For instance, in London, Marylebone is divided into six sub-districts, although Marylebone is one parish in the sense we have been mentioning. The notion of "parish" of course must be dissociated now entirely from "ecclesiastical district." In multitudes of Acts you have a great number of districts for ecclesiastical purposes, but those are not parishes in the old sense of the word; and for census purposes it was necessary to subdivide further the country, which was accordingly mapped out into 30,862 enumeration districts. Those districts were revised with the ordnance maps before us. They were framed by the local authorities, and re-examined by us, and they were arranged so that they could be visited by one man in one day. The area and the houses had to be taken into account. In the towns the extent was limited by the number of houses, and in the country by the area chiefly.

4440. Were the limits of those districts made conterminous with the parishes?—They were made so that we could readily derive from the enumeration districts the population of the several townships and parishes. I may just state that the inhabited houses in England and Wales now amount, according to our estimate, to 4,075,579, the estimated population is 21,869,607, and the area is 37,324,883 acres. The districts are on an average divided into three sub-districts containing 25 parishes, (those districts as you will recollect corresponding with the poor law unions,) 6,368 houses, a population of 34,171, and an area of 58,320 acres; and the sub-district consists of seven parishes, 1,851 houses, 9,932 people, and an area of 16,950 acres. The size of a district is a square of about 10 miles to the side. The old division of the country of course was very different. The old division of the country ran on the counties, the hundreds, the tythings, the towns; and the town population was separated from the country population. At the census of course we had to attend to those divisions of the country, but the census itself was based upon the registration districts. In the Census Report 781 towns are distinguished. You will recollect the counties, including Wales, are 52, and scattered over them are those 781 towns. The metropolis had a population of 2,803,989 in 1861, one town had a population of 400,000 and under 500,000, one of 300,000 and under 400,000, two of 200,000 and under 300,000, and seven of 100,000 and under 200,000. So that there were 12 large towns in the country having populations exceeding 100,000. There were 17 with a population of 50,000 and under 100,000, 46 with a population of 20,000 and under 50,000, and 78 with a population of 10,000 and under 20,000. Thus there were at the census 153 towns in the country with a population of 10,000 and upwards; 152 towns containing 5,000 and under 10,000, 228 towns with 2,000 and under 5,000, and 248 small towns with a population of 1,000 and under 2,000. (*See Table in Appendix*, p. xix.)

4441. Does this enumeration include every kind of town, whether corporate or not?—Yes, every kind of town. In the census we give the population of the parliamentary boroughs as well as of the municipal boroughs. Of the 20,066,224 persons enumerated in England in 1861, 10,960,998 were in those 781 towns, and 9,105,226 in the villages and in the country round the towns. It may be interesting to mention also, that the total population in London, and 71 of the largest towns in England was 7,667,622, and the population in the country and in smaller towns was 12,398,602, so that you have nearly eight-twentieths of the population in those 72 towns. The increase in those large towns has been enormous. The total increase from 1801 to 1861 in the population of England was 11,173,688, and one half of that increase was in those 72 towns. It will thus be apparent that the town population is increasing at a much more rapid rate than the country population.

4442. Can you distinguish from those various groups of towns those which are municipalities?—I can. Only 208 of the 781 were municipal boroughs containing a population of 5,432,637; and 29 of them had been incorporated under 5 & 6 Will. IV. chap. 76, sect. 141, since 1835. All London, except a small portion in the centre, is deprived of any municipal organization.

4443. Does your statement about the more rapid ratio of increase in towns compared with the country apply to small towns equally with large, or only to the great manufacturing towns in the country?—I can distinguish the increase in the different classes of towns. The annual rate of increase in 1851–61 was 1·35 per cent. in the manufacturing towns; 1·39 in the country towns; 1·47 in the watering places; 1·80 in the metropolis; 1·95 in the seaports; and 2·30 in the mining and hardware towns. (See Census Report, 1861; Appendix, p. 105.)

4444. (*Mr. Hibbert.*) When the parliamentary and the municipal boundaries are different, you only state the municipal?—Yes, we should then take the municipal; we cannot, for instance, take New Shoreham as a borough.

4445. (*Chairman.*) Can you give us the same calculations, excluding the metropolis?—Yes. The increase of population was 1·8 per cent. in London, and 2·3 per cent. in 71 of the other largest towns. It might now be convenient to show how difficult it is to make the two great existing divisions of the country coincide in any manner, and to show what difficulties have arisen in the administration of the Registration Act in consequence of those two existing divisions of the country.

4446. What two divisions of the country do you mean?—The division into boroughs and counties, and the division into poor law unions or registration districts. The Registrar General in his annual report returned the mortality of every registration district in the country; of Bristol, for instance, of Birmingham, Liverpool, Manchester, and Salford; the municipal authorities immediately complained that this did not give a true representation of the mortality of their boroughs. The report of the mortality was of the mortality of the district of Birmingham, and the municipal authorities of Birmingham complained that this was not a true statement, that it did not represent the mortality of that part of the country over which they had authority; and the representations were so strong that the Registrar General accepted the municipal boundaries in those cases. The borough of Birmingham consists of parts of three registration districts, part of Birmingham, part of Aston, and part of King's Norton. Birmingham consists of nine sub-districts, besides two sub-districts of Aston, and one of King's Norton. The borough in that way sets at defiance the registration divisions. The same difficulty is met with in dealing with Bristol; Bristol city covers parts or the whole of three unions. And in Liverpool there is the same difficulty about the borough; you have to take parts of two districts, the Liverpool district and the West Derby district. In Manchester you have parts of two districts, that is, Manchester and Chorlton, and parts of sub-districts. The sub-districts are cut in two by the city of Manchester, so that returns are received from eleven sub-districts, six of those sub-districts returning the whole of their deaths, and five returning only a part of the number of deaths. There is no coincidence between the districts and the old divisions of the country into boroughs. I will put in a list showing the great discrepancy between all those large towns, Bristol, Birmingham, Liverpool, Manchester, Salford, Sheffield, Leeds, Hull, and Newcastle-on-Tyne (*handing in the same*). Those towns consist of 59 districts or parts of districts, and 220 sub-districts.

4447. With what view do you call our attention specially to this system?—I wish to show the Commission the importance of endeavouring to make the same boundaries serve for nearly all purposes, and the desirability of not creating new districts at any

rate, but of adhering as much as possible to the old, and making the district, whatever district may be adopted, serve for nearly all administrative purposes. A great many of the difficulties of administration under the Sanitary Act, as it appears to me, are derivable from this source, that there is no great division of the country for all purposes, such as you have in France for instance.

4448. Do you suggest that registration districts should be made to coincide with the poor law districts?—With the poor law unions as a general rule they do coincide.

4449. Do you wish the municipal boundaries to be made to coincide with the poor law boundaries?—I think it would be desirable to accept for all purposes the municipal boundaries of large boroughs.

4450. (*Mr. Richards.*) Do you know the number of districts for county purposes?—I do not. There appears to be no particular reason why the whole borough of Birmingham should not be under one superintendent registrar. At present the guardians appoint the superintendent registrars, who are paid by the Treasury out of the monies voted annually; and if you alter the system of administration of course these officers will be appointed by the municipal authorities, and be paid by them.

4451. (*Chairman.*) Would not there be some difficulty in such an alteration of the area of rating?—That is one of the great difficulties in it; but it appears to me to be one of those important things that well deserve the attention of the Legislature of the country. You cannot get a simple administrative system until you get a sound division of the country, taking into account, however, the existing state of things. With regard to the smaller towns, the Registrar General publishes in his quarterly returns the mortality of a great number of smaller towns, Nottingham, for instance, and towns of that magnitude, and there the same difficulties arise. I lay this return (*see Appendix*, p. xix.) before the Commission as affording specimens of what occurs all over the country, and in every borough.

4452. (*Mr. Hibbert.*) You stated that you only publish returns for a certain number of towns, why did not you extend it to a large number of populous towns?—The Registrar General has been requested to do it for other towns, but there were difficulties in the way. He now publishes the mortality in each of 11 English towns every week, but every quarter he publishes the mortality in 46 towns.

4453. You have been applied to to publish it for a larger number of populous towns; what are the difficulties in the way of doing so?—It would be partly on account of the trouble of getting such a number of registrars to work. The Registrar General has no means of paying them. It is a question of expense; that is one of the elements, and of course it would increase the work of the office and the number of men to be employed.

4454. (*Dr. Acland.*) Do you remember the case of the Oxford union and the Headington union?—Yes, I recollect that Dr. Greenhill published a return of the mortality of Oxford, and he had to resort to the registrar of Headington as well as Oxford. The city takes in parts of three poor law unions. The population in 1861 of the poor law union of Oxford was 20,037, that of the Headington union 17,185. I may mention that in forming those poor law unions an account was to some extent taken of county boundaries; but in many districts they were disregarded, perhaps, unnecessarily. In some cases, however, it appeared absolutely necessary to disregard the county boundary; for instance, where a town is formed on a river; Peterborough, I think, is an example of that where a town is on a river which serves as the county boundary. The farmers and other persons come to this town to market, and assemble in the town, which is on the river, and necessarily in that case, the poor law union embraces parts of two counties. It is an inconvenience, but it appears almost necessary, because you are obliged, in forming a poor law union of an aggregate of parishes, to get some point at which the guardians can conveniently meet; and it happens that that point is on the county boundary, where counties are divided by a river. The Thames, as you are aware, generally serves as a county boundary. It appears that when the old counties were formed, before there were bridges, a river was a real boundary; but by the time the Severn was occupied, they had bridges, and you will find that generally, in the case of the towns on the Severn, that river does not form the boundary of counties, it generally cuts the counties through.

4455. (*Chairman.*) Will you proceed with your description of the registration system?—Under the Registration Act (I confine myself chiefly to the registration of deaths and the causes of deaths, as that is the chief subject of your inquiry) all deaths are registered on information given by certain parties who are defined in the Act of 6th & 7th William the Fourth, chapter 86, sec. 25: "And be it enacted, That some "person present at the death or in attendance "during the last illness of every person dying in "England, or in case of the death, illness, inability, "or default of all such persons, the occupier of the "house or tenement, or if the occupier be the person "who shall have died, some inmate of the house or "tenement in which such death shall have happened, "shall, within eight days next after the day of such "death, give information, upon being requested to do "so, to the said registrar, according to the best of his "or her knowledge and belief, of the several particulars hereby required to be known and registered "touching the death of such person: Provided always, "that in every case in which an inquest shall be "held on any dead body, the jury shall inquire of "the particulars herein required to be registered "concerning the death, and the coroner shall inform the registrar of the finding of the jury, "and the registrar shall make the entry accordingly." Under the Act the cause of death is returned; it is specified in the schedule, but there is no example given. I believe that heading was inserted in the House of Lords, but it has led to a great amount of valuable information being supplied which has furnished the basis of the returns of the Registrar General as far as regards the causes of death. I would just mention, that the Registrar General, seeing that the Act was left in that state, and that medical men were not compelled under it to furnish a certificate of the cause of death, appealed to the College of Physicians immediately he came into office, and they very readily co-operated with him in getting the medical men to furnish those returns voluntarily. The president of the Royal College of Physicians, the president of the Royal College of Surgeons, and the master of the Society of Apothecaries "earnestly "recommend that every practising member of any "branch of the medical profession who may have "been present at the death, or in attendance during the "last illness of any person, shall immediately after "such death place in the hands of such other persons "as were in attendance, of the occupier of the house "in which the death occurred, or of some inmate "who may probably be required to give information, "written statements of the cause of death which such "persons may show to the registrar and give as their "information on the subject." The date is 1837. The plan of allowing medical men to give these written statements in their own way was found not to work well, and a certificate book was devised, which the Registrar General distributed all through the country, giving instructions to medical men as to how they were to proceed in furnishing those certificates. I may perhaps read the certificate in its present form. It is addressed "To the registrar "of the sub-district in which the death took place," and it is to this effect: "I hereby certify that "I attended John Jones, carpenter, aged 21 years "last birthday; that I last saw him on January "11th, 1861; that he died on January 11th, 1861, at "7, King Street, Marylebone, and that the cause of his "death was typhus 19 days, pneumonia three days.

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" Signed, Edward Lawrence, M.D., 37, Soho Square, " January 13th, 1861;" and a note is added, "If " this certificate is not signed by a qualified practitioner " the registrar should write 'not certified' in his " register after the cause of death; thus, 'phthisis " '(six months),' not certified." The Registrar General instructs the registrars not to receive certificates from unqualified practitioners, and, as far as he has influence, certificates are supplied only by qualified practitioners of the country.

4456. Is this your present form?—Yes, that is the present form.

4457. Will you state to us now what proportion of cases are so certified?—In the 30th annual report, which has just been published, at page 208 I have given the proportions as they are determined for London: "In London about 93 per cent. of the deaths " are certified, as far as the causes are concerned, by " the medical attendants, five by the coroners, leaving " only two in 100 uncertified." "One of the counties, " Northampton, taken at hazard yielded this result: " out of every 100 deaths 91 were certified, seven " were uncertified, two died without medical attend- " ance. In some few counties many of the people get " no qualified medical advice during life; the medical " man lives at great distances, or the people, ignorant " themselves, apply for relief to irregular practitioners, " men sometimes of natural ability, but often posses- " sing no claims to confidence except those founded on " boundless faith in their own nostrums, which perform " the same amazing miracles now as were performed " in the dark ages by relics, charms, and exorcisms. It " must be stated, moreover, that the causes of death " assigned are often inadequate and frequently " erroneous." I proceed to discuss at some length that question of the causes of death. I say, "A " person is dead. What was the cause of his death? " is the question addressed to the medical atten- " dant. He has all the information to guide him " in his answer that he employed during life in the " treatment, but that may be insufficient." I give dropsy for instance, which is the result of a great number of organic affections. Then further on I state, "Observers with excellent intentions are " not always competent, or do not devote the re- " quired time to their investigations. Their means " of observations are sometimes restricted; they only " see the patient for a few moments in his last hours, " or for a few minutes at a public dispensary, while " from children the subjective symptoms cannot be " gathered. Where the organic injury is evident in " the dead body, and is the proximate cause of death, " the inquiry after the first cause only commences. " Thus a man is found dead in the road in blood with " a wound through his head; that was lethal; but with " what instrument was the wound inflicted? A " pistol. Who fired the pistol? the man now dead " or another man? Himself. Then was it an accident " or a suicide? What were the motives of suicide? " Another man? Is the manslayer a soldier fighting, " or a duellist? or is he guilty of murder, man- " slaughter, or justifiable homicide? In a railway " accident the question, 'who is to blame?' involves " 'what was the cause,' what were the circumstances " of the overthrow or collision." Then I go on to show that our judicial tribunals are employed exclusively in investigating this class of causes, but that under the registration system inquests as it were are held on the whole of the people of the country (*see Appendix*, p. xxviii.): from information supplied in that manner and entered in the register books, the Registrar General's abstracts are made. He publishes a weekly table for London and for the large towns to which I have previously alluded; and a quarterly table for the whole of the poor law unions or registration districts of the country, showing the marriages, births, and deaths in every one of those districts, with notes from the registrars as to the prevalence of any epidemics, as far as those registrars are competent to furnish such notes. Then in the annual report there is an elaborate analysis of the marriages, births, deaths, and the causes of deaths; calculations of the rate of mortality at different ages, and the rate of mortality from different causes.

4458. It appears from what you have said that in a very great proportion of the cases in London, and in a very great proportion also in the country practically, the causes are certified properly?—Yes, they are certified by medical men. I should say that the system is not yet by any means perfect or satisfactory.

4459. Would you tell us generally what you would suggest as remedies for the defects of the present system which you have alluded to?—I speak merely now of defects so far as regards the registration of the causes of death, and of these the first arises from the imperfection of medical science itself, and will only diminish as that science advances; and the second arises from the imperfect practical application of existing science. Only a portion of the population has the advantage of consulting the most skilful physicians or surgeons of the day, who are conversant with the newest discoveries in physic; and in the remoter parts of Wales, as well as in some English counties, the medical man lives so far distant as to be absolutely beyond the reach of large numbers of the the people. Many young children, many long afflicted men and women, and many old people, die without being seen for weeks before death by a surgeon; many men die of hernia and many women in childbed, who might be saved by surgical skill. Yet the medical attendance of the population is I believe better in England that it is in any other state of Europe; and the poor law does much to extend its advantages to the lowest classes. I may mention that England is the only country that publishes any returns of the causes of death in this form, and at Congresses where the question has been discussed, difficulties have been raised on the ground that the medical men were not sufficiently numerous to attend the population in their last illness. It was mentioned at one of those Congresses by the representative of Prussia, and by the representatives of a great many other States, that medical men are not in sufficient numbers to attend the poor, and there is no public provision such as there is under our poor law; so that large numbers of the people die without any medical attendance at all. In this country also a very large number die without any adequate medical attendance, but I believe the relief which they get is better than that furnished to the population of any other State in Europe; the defective medical attendance is, however, one of the difficulties in the way of getting the causes of death returned.

4460. When you say that such a proportion of deaths are certified, do you suppose that we really have accurate accounts of the deaths themselves, or that some deaths are concealed?—I have no doubt that a few deaths are unregistered, but under the Registration Act no body can be buried unless the death has been registered previously, except in this case, that a clergyman if he does bury a body is bound under a penalty to give the registrar information so as to enable the registrar subsequently to enter the death.

4461. Do you not suppose that there are many cases, including infants' deaths, which are wholly unknown and concealed?—I do not think that there are many.

4462. (*Dr. Acland.*) Is our system better than the system in Ireland?—In Ireland the whole of the deaths are not at present registered. There is a compulsory clause in the Act, but it does not appear to be carried out. We believe that our registration of deaths is comparatively very complete. The dispensary medical officers in Ireland generally serve as the registrars, and as far as we can learn they are not the best registrars. I could give some instances in which the present system of registration has contributed to bring crime to light, and has facilitated the conviction of the guilty. The trials of Palmer, Pritchard, and other criminals afford illustrations. Enough has been done since the passing of the Registration Act to establish the utility of general

inquiry into the causes of all deaths, to justify the employment of the machinery necessary to make the inquiry as complete as possible for accuracy of record, for protection of life, and for the furtherance of medical science.

4463. (*Chairman.*) Will you state generally what class of men are appointed to the office of registrar? First the superintendent registrar, and then the sub-district registrar?—The superintendents are often solicitors, and the registrars are sometimes medical men, but I can furnish the Commission with a return showing the occupations of registrars. It is one of the defects perhaps of the registration system, that you are not enabled to employ men who can devote the whole of their time to their work. You are obliged to take a relieving officer, a grocer, or a clerk, or a person with some other employment. The great defect, as you will observe, of the record is this, that a person goes to the registrar and gives information and says that death has occurred. Of course he can go without a medical certificate, and acting as an informant, the registrar is bound to record what this person tells him. The registrar does not see the body, and does not know that the death has occurred. The informant signs the register book, either in writing or by a mark, and in my report on the causes of deaths in 1864, I give some instances showing that the informants are females to a large extent, and that a great number of them make their marks, and are not able to read the record; if the persons qualified to give information do not come to the registrar, the registrar is directed to go to the house where the death occurred, or wherever such person qualified to give information can be found, and ask for it. When found, informants by refusal to give information, and to sign the register books, render themselves liable to be indicted for a misdemeanor. The inducement to take the initiative turns on the use of the registrar's certificate, which, given after registration, is authority for the burial of the body. Any person burying a dead body without the certificate of the registrar or the coroner, and neglecting to give notice of the burial within seven days, incurs a penalty not exceeding 10*l.* for every such offence. Registration is thus performed without any expense to the parties, and with as little trouble and expense to the public as possible. In the case of Leach *v.* Leach* it is reported that the Vice-Chancellor observed that he could not be satisfied with the sealed certificate. "All the registry proved," he is made to say, "was this, "that someone called at a particular house, and was "told by someone that a man named so-and-so was "dead. Although such evidence was parliamentary, "he did not consider it sufficient here." Commenting upon the case in which Fletcher, during her life, registered the death of a lady of the name of Slack, and with the help of the registrar's certificate and a forged will, took consols to the amount of 5,000*l.* from the Bank of England, the *Times* thus criticised the Act: "The registrar receives information of the "death at his office; he does not go to the house and "scene of death. He is thus necessarily liable, more than "could have been the case before, to impostures. A "party calls at his office, gives information of the "death, and receives the certificate." I say the Vice-Chancellor can scarcely have been correctly reported; for the Act distinctly states that the register is invalid unless the informant has signed in it his name, description, and place of abode, thereby rendering himself subject to the pains and penalties of perjury if he has wilfully made any false statement touching any of the particulars to be registered. And Fletcher not only got a false certificate but procured probate of a forged will. It must however be admitted that in a large city the registrar sitting in his office has no means, or very imperfect means, of knowing and identifying informants, or of verifying the accuracy of the various particulars which he enters on the national registers. The Bank of England refuses to accept the death certificate as a proof of death. The registrars are a highly respectable body of men, of all the various classes of society, and as they are only paid small fees they are necessarily engaged in other professions, in trades, or in some branch or other of industry. The work requires integrity, accuracy, sound sense, good writing, and close attention to all the minute provisions of the Act and of the regulations. The clerical part of their duty is checked by the inspectors, by the superintendents, and by the central record department. There is no check on the accuracy of record. A few cases of fraud have occurred of this kind: the registrar himself has invented a certain number of deaths; that has happened I think in three or four districts through the laxity of the Act. A short time ago a case occurred at Manchester, where an old woman had given information of deaths which never occurred, therefore that part of the Act unquestionably requires amendment. In all those cases the deaths were returned without a medical certificate; and what I recommend as the great remedy for those evils is a complete system of registration accompanied by medical certificates.

4463*a*. Have you any suggestion to make as to more effectual means of enforcing registration?—There are two systems which might be adopted: one would be to do as is done on the Continent, namely, to send a medical man to every house where a death has occurred, to examine the body, and give a certificate under which the burial should take place. The parties themselves living in the house would have to apply, or the police would see that such a visit was made, as is the case in France.

4464. Who is to send such a man, and how is he to be informed of the occasion?—The parties themselves as a general rule apply for a certificate which entitles them to bury the body. I am not myself in favour of the French system. I am persuaded that the best thing would be to insist on a medical certificate from the medical attendant being produced in every case. The parties themselves who employ the medical man would pay him. But where there has been no medical attendant, and where a medical man has not seen the patient recently, or has not seen the body, then the registration medical officer should be called in. The registration medical officer in large towns might either be the health officer or someone acting under the health officer. In Manchester and Liverpool it would be impossible for the health officer to visit and certify all the cases, and he would naturally employ other persons to discharge that duty. The persons who, I think, would do that with most economy would probably be the poor law medical officers; but they should not be necessarily in the employ of the poor law. In the case I have supposed, the clergyman would be obliged to refuse burial, and indeed in every case, unless a certificate of the cause of death was produced. That is necessary for the protection of society from any secret poisoning or from injury, and particularly for the protection of children and for old people. It is absolutely necessary in every case that the cause of death should be certified by some medical authority.

4465. (*Mr. Paget.*) Children not unfrequently die after being out patients, or, as it is sometimes called, casual patients in hospitals, and the medical attendant of those children has seen them ill, but it may be not within two or three days of death; how should their deaths be certified?—I think he should not give a certificate. It is the practice now for dispensary surgeons and physicians to give certificates in a great number of those cases, but I think they are scarcely justified in that course. They give certificates out of zeal, and from a desire really to promote registration, and it is quite certain that if they did not give a certificate, there would be no information as to the cause of death; but still I think that state of things is unsatisfactory. The child should be visited by a medical man.

4466. Cases of that kind used to occur not unfrequently to myself, and I always refused a certificate,

* *Times*, March 6th, 1844.

W. Farr, Esq., M.D., F.R.S.
24 June 1869.

or I gave a certificate merely that the child had been brought to me ill of such a disease, and was said to have died; but supposing the medical inspector were to visit, how could he form any accurate knowledge of the cause of the child's death?—He would have to get the information from the medical attendant, and from other sources.

4467. Do you think that without a very careful examination of the dead body, for instance by a complete *post mortem* examination, he could acquire a knowledge that the child had not been poisoned?—I am quite sure he could not, but he could investigate the case closely, and I think he would be more likely to discover from the symptoms and from other sources whether it had probably been poisoned or not than the registrar could in his office.

4468. So that you would not think it sufficient that the person who had been attending a child, or any other sick person, within two or three days of death should give a certificate of the cause of death?—I think he should give a certificate in all cases where he himself is satisfied that the death had occurred, and that would of course apply to a great number of cases in private practice; it is only with those casual patients at hospitals that you would have any difficulty in knowing whether the death had occurred or not. I have given forms of certificate suitable to each of those cases: the medical attendant states for instance in one of them, "I hereby "certify that I attended John Jones, carpenter, "aged 21 years last birthday; that I saw him alive "on January 11th, 1866; that he died on that day at "7, King Street, Marylebone, and that the cause of "his death was——;" that is to say, when the attendant is satisfied that the death has arisen from that cause he gives a certificate in that shape. Another certificate runs: "I hereby certify that I attended "Jonathan Williams, aged 32 years last birthday; "that I saw his body on January 26th, 1866; that "he died on January 24th at 211, Oxford Street, and "that the cause of his death was——." There the medical man attended only. Another case we have is thus met: "I hereby certify that I visited the body of "Richard Johnson, a mason, aged 25 years last birth-"day, on March 21st, 1866; that he died on March 19th "at 19, Waterloo Road, S., and that the cause of his "death was——." The visit might either have been during the life of the patient, and so near the death as to leave no doubt in the practitioner's mind, or it might have been a visit after the death.

4469. (*Chairman.*) Have you any other suggestions to make as to improving the system of registration of the causes of death?—Of course with a proper organization, if there were medical health officers, as I imagine there should be, all over the country in connexion with those certificates, the health officer no doubt would exercise a sort of supervision, and a very useful supervision, as to the accuracy of the returns. He could make suggestions where a medical man did not return the cases properly, cases for instance, as Dr. Rumsey mentioned, where the assistant had been acting carelessly, and where the medical man had taken no trouble in giving information accurately. So that the registration of the causes of death in that way would be rendered as satisfactory as possible in the present state of medical science. I beg to lay before the Commission an extract from the Appendix to the Registrar General's Twenty-seventh Annual Report, in which I have discussed at some length the defects of the present registration system. (*See Appendix*, p. xxii.)

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 28th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY IN THE CHAIR.

The EARL OF ROMNEY.
The EARL OF DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Col. CHARLES B. EWART, C.B., R.E.
SAMUEL WHITBREAD, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

H. S. Milman, Esq.
28 June 1869.

(30.) HENRY S. MILMAN, Esq., examined.

4470. (*Chairman.*) Will you be so good as to tell us what acquaintance you have with the town of Monmouth?—I was a resident there for six years up to February 1868. During the latter part of the time I served on the borough council, and from November 1866 to November 1867 I was mayor of the borough.

4471. What is the size of the town of Monmouth, and the population?—The population is between 5,000 and 6,000; it is a somewhat straggling town, and it is difficult to say what acreage it contains; it occupies partly the flat and partly the sloping ground at the confluence of the Wye and Monnow.

4472. What is the nature of its local government?—Its local government is the borough council and the commissioners under a local Act applying to the town only, which is but a small part of the borough. These commissioners are almost identical with the council. I forget at this moment the precise difference, but most of the members of the council are also commissioners of the local Act.

4473. What was the date of the local Act?—The date of the local Act was 1818, the 58th of George the Third.

4474. Is the municipality conterminous with the poor law parish?—The municipality is larger than the poor law parish; it includes the poor law parish, and also a great part of another parish, but the poor law parish of Monmouth is by far the largest part of the municipality. The municipality and the parish also extend on both sides of the Wye and the Monnow.

4475. What is the union to which the poor law parish belongs?—The Monmouth union.

4476. Is it a large union?—It includes 34 parishes and parts of parishes, of which four are in Gloucestershire and 10 in Herefordshire.

4477. What is the sewer authority?—The sewer authority is the mayor, aldermen, and burgesses, acting by the council.

4478. Under what Act?—Under the general Acts.

4479. Are the sewer authority under the general Acts, and the local government under the local Act, the same?—They are almost the same; they are practically the same. The area of the former includes that of the latter, and much more.

4480. Do you know the rateable value of the

district?—The rateable value of the town of Monmouth is 15,270*l.*

4481. Can you tell us the amount of the rates in the pound in any one year?—The amount for 1868–9 is as follows:—

Parish rates—			
Poor, April 1868		1*s.*	6*d.*
,, Oct. ,,		1	0
,, Jan. 1869		1	6
		4*s.*	0*d.*
Highway, 1868		0	7
Church, 1868		0	5
Town rate, under local Act—			
Paving, cleansing, and lighting, 1868		1	0
Total		6	0

4482. Will you state what is the plan of sewerage at Monmouth?—The plan of sewerage consists in sewers, and I believe many of them of old date, running into both rivers, and small sewers leading into those. There are also in many parts private cesspools belonging to one or more houses.

4483. Are we to understand that there is a main drain into the Wye, and a main drain into the Monnow, and that the houses drain into those main drains?—Yes, and besides those main drains there are cesspools.

4484. What becomes of the contents of the cesspools?—The cesspools at the time to which my experience relates occasionally became a nuisance, and then the persons who drained into them were ordered to empty them, and they were to cease to be a nuisance.

4485. There was no regular system of scavenging by which those cesspools were emptied?—No, not by which those cesspools were emptied.

4486. I presume you are of opinion, without entering into your views of the best system of sewerage, that this was a bad one?—A very bad one.

4487. Perhaps you would tell us generally from your experience, without entering into detail, what you think should have been done?—I think that many of those cesspools should have been entirely abolished, and that no cesspool should be allowed to exist except under proper regulation, both as to construction and as to emptying at proper times and in a proper manner.

4488. But supposing the cesspools to have been made on the amended plan which you propose, do you think that they would be a better mode of disposal than the new system of discharging the contents of privies into the main drains, and through the main drains into streams, or in land irrigation?—Yes, I do; I consider that the principle of not discharging sewers into streams is already asserted by the spirit if not by the words of the Acts of Parliament, but not carried out. With regard to irrigation, my private opinion, so far as I have had the means of judging, is against it.

4489. Do you think that the law is defective in merely asserting what should be done, without making it imperative?—I think it is defective in not making it imperative, but it is also defective in not substituting some other plan at the same time that it forbids the old one.

4490. Would you have the general law lay down a specific plan of sewerage?—I would have the general law lay down certain points which must be indispensable in any plan of sewerage, but I think that the circumstances of districts and of towns and of cities are so different that they may require very different systems or modifications of systems, and therefore if certain main principles are laid down I think that the sewerage of each district, or town, or city, should be formed with regard to those principles.

4491. What are those general points applicable to all systems which might be laid down imperatively by a general law?—I think the first principle is the prevention of the discharge of sewage into water in any shape, whether running or still. I think that another principle should be the carrying of the sewage in such a manner and to such points that it should not soak into the soil of any town or inhabited place. Those being laid down, of course the question arises, what is to become of the sewage. I think that it should be conveyed to a place where it would not soak into the ground, and should, by means adapted to the place and to the circumstances of the district, or town, or surrounding country, be removed from that place, such removal being either done, or enforced, or managed by the public authorities.

4492. I understand then your view to be that the sewage should be kept separate from the water drainage?—Yes.

4493. And that the sewage should be collected so that the farmers might buy it by itself?—Yes, in certain places. I say that in reference to the small town in which I lived, because there from the circumstances of the neighbourhood, with which I am well acquainted, I believe that the farmers would buy and fetch it. One of my reasons for stating that is, that when I first lived there and had a stable I inquired about the price of straw, and I was told by a farmer that he would furnish me with straw for nothing if he might fetch it away in the shape of manure. From that I conclude, first, that the farmers want manure of a like kind, and, secondly, that they are ready to buy it and fetch it a reasonable distance, and as they do fetch it now from this town and from towns of a similar size, in their own waggons, I do not see why they should not fetch it from receptacles into which the ordinary sewage of a town might be conveyed.

4494. Have you found that farmers who were willing to buy sewage in that state have not been willing to use it when diluted with water?—No, I have not found that, but my reason for saying that it should not be diluted with water is that water so much increased the volume of it and the difficulty of removing it, and also that, so far as I have understood, the mixing of sewage with water has chemically speaking a decomposing effect, and is liable to increase the nuisance of sewage, but I speak quite unscientifically in that respect, merely having read and understood such to be the case.

4495. I gather from your evidence that you on the whole prefer the cesspool system?—I prefer the cesspool system, but I am careful not to use the word "cesspool," because it already has, I may say, a very bad odour in consequence of being applied to a very imperfect arrangement. I therefore use the term receptacle. I think that a cesspool will do more harm than good if ill-constructed and ill-placed.

4496. Then I take it that generally your opinion is in favour of an amended cesspool system?—Yes.

4497. Where do the privies generally discharge in the poorer parts of Monmouth?—In the poorer parts of Monmouth they either discharge into a hole underneath themselves, or sometimes with a slope into a receptacle behind, or at the side, or into one of the rivers or streams.

4498. According to your views, in the preparation of the provisions of a general Act, would you make it penal to allow privies to discharge into streams?—I would prevent it; and I would enforce the construction of proper privies to all houses by the landlords, subject to these conditions, that they are not to discharge into streams or ponds, and that they are to discharge into receptacles not allowing of soakage.

4499. Supposing that such an Act passed, would you treat any such communication or discharge as you have described as a nuisance to be removed under the Nuisances Removal Act?—I consider the Nuisances Removal Act useful in some degree, but in so partial a way that I should like to see under any system some consolidation of the powers in an amended Nuisance Removal Act; but with regard to nuisance removal, I would not order any removal of a nuisance unless I said what was to be done with the nuisance. I have been myself personally, in the course of my duties, in the town of Monmouth, round with the inspector of nuisances, and have given orders that such and such a nuisance should be removed, but then the great difficulty was to direct where it was to be removed to.

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There was perhaps a cesspool full and badly situated, difficult to get at, and in an extremely liquid and unmanageable state; and although it might be removed by being hoisted out and thrown upon an adjoining garden or yard, yet I had no means of saying where it was to be removed to, so that it might be ultimately removed entirely. That I consider is a part of the imperfection of the present law.

4500. Will you state what is the water supply of Monmouth?—The water supply of Monmouth is partly from pumps in the soil, and in some parts the pumps are good. In my own residence, in the grounds there, I had two excellent pumps, but my house happened to be on the edge of the town, at some little distance from any drain or sewer, and the water was good. In other parts of the town, which were more closely inhabited, there were pumps; and I have in the course of my rounds seen those pumps attempted to be worked, and bringing up water which certainly was totally unfit for use, and there was no doubt that those pumps were corrupted by the soakage of drains and cesspools into the soil. I have been informed by those who have resided many years there, that in the town of Monmouth on sinking a very few feet almost any amount of very good water may be obtained; but of course that good water could not be obtained if in the very same place, or very close by, the contents of drains and cesspools were sinking into the soil. That is with regard to the natural supply. With regard to the artificial supply, there are waterworks which have been established in a suburb of the town by which water is drawn from a point of the river Wye above the town, and conveyed to a considerable height in order that it might be thrown by pipes over the bridge and into the town. This water is tolerably good, but it appears to me that if the river were pure and the soil were pure those waterworks would be almost unnecessary.

4501. I observe in the paper which you have been so good as to give me you use this rather epigrammatic expression, which I should like you to explain, "Keep the springs clear and the water supply will settle itself?"—I imagine that I had just been explaining that if you will keep the springs pure and the rivers pure the water supply will settle itself, because there will be a good natural supply without the use of waterworks.

4502. Do you mean by that that the water might be more cheaply and better supplied than it is now if only there were better protection of the springs and streams?—Yes, my opinion is that water might be supplied in a more satisfactory way than it is now supplied. I am told that in former days there were more pumps and better pumps than there are now in many parts. What that was owing to I do not know, but certainly from the imperfect making of a drain a pump has often been destroyed in quality and therefore has been closed. I think it is much more satisfactory that people should be able to supply themselves with water from the natural sources, than that they should be obliged, and compelled perhaps by some legal regulation, to supply themselves from waterworks, when by sinking a well in their own grounds they might have good water.

4503. At all events, that would be the case at Monmouth, although possibly there may be places where, from the geological formation, that would not be so?—I think so certainly, and therefore I would not insist upon any one system for all places. I think that the question of water supply to a place very much depends upon the geological formation, and indeed upon the whole conditions of the place, but wherever there is a natural supply, I am anxious that that should be protected by law.

4504. At Monmouth, if the springs and streams had been well protected, would pure water have supplied the town by natural gravitation?—I do not know that it could have been thrown up to heights without some artificial means; but I think that the two rivers and the springs and the water raised by pumps from the soil would probably have been sufficient.

4505. You describe the town as partly upon a flat and partly on a slope, are there springs at sufficient elevation on the slope to supply the town by gravitation?—I should think there would be; but I will not say that for every quarter of the town. The waterworks are so constructed that the water is drawn from a higher point up the river and raised up by artificial means, and from the level to which it is raised it is distributed.

4506. Practically you think that Monmouth first defiled its own streams and then complained that it could not get pure water?—Yes.

4507. Your waterworks, I understand, were supplied by a private company?—Yes, by a private association; I do not know whether it is constituted a company, but it is a private body of persons, all of whom, I need hardly say, are interested in the prosperity of it.

4508. The result I suppose is that the pure water costs a great deal more at Monmouth than it would have done if the natural springs and streams had been protected?—I think so, for this reason, that many persons have to pay water rates who otherwise would not have to pay them; they have to pay for artificial water, when they might, if the natural water were protected, have had it without paying.

4509. How should the law compel the sewer authorities to protect the streams as you think they should be?—I think that every stream throughout the country should be protected. In any country place, certainly in the country places in the neighbourhood of Monmouth with which I am well acquainted, wherever there is a stream the neighbouring cottages place their privies over that stream, the general impression of the people being that the stream is the sewer, and the sewer is the stream, in fact that the proper sewer is the stream. I think that that should be universally prevented and altered, and I am of opinion that the authorities in every parish, whether a town or a country parish, should enforce the removal of the privies from such a place and place them where they will not defile a stream and make such regulations analogous to what I have already mentioned as should provide for the removal of the refuse. The number of small streams about the country is very large. I have in my hand here a portion of the map on the wall in which all the streams over the whole basin of the Monnow are laid out. I think that every single stream that is there laid out should be protected by the authorities of the parish in which it is situated, and that the owners of the cottages ought to be compelled to provide every cottage with a privy, and forbidden to provide its drainage by means of the stream.

4510. Are there many tributaries to the Monnow?—This map, which has been drawn on a large scale for a fishery report, represents the basins of the Wye, the Lug, and the Monnow, and on a much larger scale the basin of the Monnow. I see here that the Wye is 148 miles in length, the Lug 70, the Monnow 33, and the tributaries of all three rivers 120 miles; the total is 371 miles. I am of opinion that every parish within this area should be bound to protect its streams.

4511. Have you turned your attention to the question of river conservancies?—No, not sufficiently to offer any evidence upon that subject.

4512. If there were a board for the purpose of conservating those streams, what authority should the board have to control that matter?—It appears to me, without reference to any particular basin, that if every parish protected the stream within its circuit, it would answer the purpose. It does not appear to me to be necessary that there should be a new authority, with a new area and a new district, for the purpose of conserving any particular basin for this purpose, but I think that in every parish and in every district now under any sewer or other authority or local board, every stream, however small, should be protected.

4513. Where there were a number of different parishes responsible for keeping one common river

clear, would not it be necessary to have some overriding authority?—Yes, I think it would be, certainly.

4514. When you say that the sewer authority should have power to stop anything polluting a stream, would you go so far as to say that the local authority should have control over new buildings, so that if buildings were made so as to create a nuisance, they should have power of removal?—Yes, I think they should.

4515. Is it your opinion that such control of buildings should be given even in rural places, and that there should be everywhere a local authority to whom the plans of new buildings should be referred for approval?—Yes, I think there should be such a plan, certainly.

4516. Would not such control be very much resented by the owners of property?—I think that depends in some degree upon the manner in which that control should be exercised. I think that every owner of property should be compelled to conform to certain principles, such as those which I have mentioned before, and that if he did conform to them of his own accord he might be left without further interference. If, for instance, the owner of a set of cottages who now places the privies over a neighbouring stream chose to place those same privies and any cesspools that he had in a place allowed by the local authority, he might do so at his own expense and in his own way, subject only to the approval of the local board, which would see that the general principle laid down was carried out. I am strongly in favour of all alterations, whether as to drainage or as to natural water supply, being made, if possible, by those interested in the property rather than by a public authority, if that can be done.

4517. Why do you say that?—Because I think that if the interference with property is as little as possible, and if as much as possible is done with the consent of the owners of property, a new plan would be much more easy to carry out everywhere.

4518. Then I understand you that the local authority should control the plan made by the owner, that the work should be done by the owner, but that the authorities should have some power of compelling the owner, if he acted contrary to or without their approval, to conform?—Yes.

4519. I suppose that in a larger place than a mere rural district, where a general plan of sewerage is carried out, you would give the local authority full power to compel new buildings to conform with their plan?—Yes.

4520. What is your opinion as to storing rainwater?—My opinion is of a very general kind, not based upon any knowledge of engineering. It appears to me that there is a great waste of water, particularly in a town, because of the imperfection with which the system of shoots and drains near the tops of houses is carried on. In the town where I lived, even by the old local Act there was a regulation that all houses should have shoots to them, but in consequence of apathy or self-interest, or for some reason I do not know, this regulation was not carried out. It appears to me that if rainwater in a town could be stored and allowed to run into cisterns near the tops of houses it might be managed very simply, and that that would in some respects obviate the necessity of expensive waterworks, and also that in the case of fire or in any other case it would be much more easily available.

4521. I presume you would make the same rules as to discharge into streams apply not only to privies, but to slaughter-houses and similar places?—Certainly. I have in my mind at this moment the position of the slaughter-houses at Monmouth, which are totally in opposition to the opinion which I have expressed. Some 30 years ago a new town hall and market were built upon the banks of the Monnow, and underneath those are slaughter-houses; there is a short terrace in front, and underneath this is the river Monnow, and there are drains that run down under this terrace from these slaughter-houses into the Monnow, through which all the filth, after a slaughtering day, is poured. This appears to me to be extremely wasteful, and of course it befouls the river Monnow very much. I have seen poor people go down to a point a slight distance below where all this filth is poured in, to draw water. The water of the Monnow, which a short way below the point which I speak of also receives the refuse of a large tannery, is often in a very foul state.

4522. What is the system of nuisance inspection at Monmouth?—The system of inspection, such as it is, is under the general nuisance removal, sanitary, and sewage utilization laws, so far as it is carried on. Monmouth is a town which has its own borough police, consisting of a superintendent, a sergeant, and four policemen, and the superintendent of police is also inspector of nuisances. He happens to be an efficient man, and the inspection, so far as the law directs it, is well carried out.

4523. Do you think that there should be a large body of inspectors, in order constantly to see that the law is carried out?—I think that such inspection in such a place as I speak of, from which my experience is drawn, might be carried out either by the present inspector or at all events by the body of borough police. I do not think it would be necessary to create a new staff of inspectors.

4524. What is your opinion as to the central authority overriding all the local authorities in the kingdom?—I think that if any such general principles are to be laid down to be carried out in sewerage, they will not be so carried out unless there is a central authority to see that it is done.

4525. Do you think that the Local Government Act Office, as it now exists, is a sufficient central authority?—I am not well acquainted with the constitution of the Local Government Act Office, but if it is one single central authority situated in London, I should think that either as it is now or with some little modification, it might be a proper central authority.

4526. Do you think that the Act of 1848 contemplated a more effective central authority than the subsequent Act of 1858?—In the Act of 1848 it was recognized that no waterworks should be erected without the approval of the General Board of Health, but in the subsequent Act 10 years afterwards, permission was given to the local authorities to erect waterworks without that approval. I remark upon the inconsistency of the Acts in that respect. I think that no expensive works, such as waterworks are, should be undertaken without the approval of either the central authority or of some intermediate authority. I think it is possible for the power which should belong to the central authority to belong to a county authority or a district authority of the same kind.

4527. Does the local Act of Monmouth, the 58th of George the 3rd, give the authorities there much the same power as the general Act would give them if they adopted it?—It does not give so large powers, certainly, and indeed it is full of many obsolete enactments, and many enactments of difficult construction as to rates which occasion great confusion, and which would interfere very much, I think, with the working of any general Act. Sometimes I have heard the question raised in the council as to the adoption of the Local Government Act, and the dread always has been the expense of that Act, because that Act gives greater powers of creating expensive works and of laying on rates than the local Act gives. The local Act only permits a rate up to the amount of 1*s.* in the pound under any circumstances.

4528. Does that mean all the municipal rates, exclusive of poor rate?—All rates for the purpose of that Act—paving footways, cleansing, lighting and watching.

4529. You think that the town would like to adopt the general Act, but that they are afraid of the expense?—I have heard that objection made to it.

4530. How do you think that such local Acts could be dealt with, supposing we made a consolidated Act for the local government of every parish in the kingdom?—The local Acts now are dealt with by the Local Government supplemental Acts, being wholly or partly

repealed in many places from time to time, but I have not exactly considered in what way they should be dealt with. I think some more general mode of dealing with local Acts ought to be and might be provided in any new legislation.

4531. Do you think that the local Acts should be got rid of or made to conform by reference to the general Act?—I think that they should be got rid of, and I think that making them to conform by reference would create very considerable confusion.

4532. What is your general opinion as to consolidating all the sanitary laws of the kingdom?—I think it is almost a truism to say that they should be consolidated, but certainly at present, having had something to do with the administration of them, I find very great inconvenience from their not being so. I have an index to the statutes, which I always keep up to the present time, and in order to ascertain the state of the sanitary laws at once I not only have to refer to several Acts, but to five or six heads of sets of Acts. There are the Public Health, the Local Government, the Nuisances Removal, the Sewage Utilization, and the Sanitary Acts, and under each of those heads there are a great many, and they touch upon each other, and successive Acts and sets of Acts repeal those previous, and the consequence is that the whole of the legislation is in such a state that it is very difficult to ascertain what the law is, independent of the imperfections which would exist even if, in its present state, it were consolidated.

4533. You have expressed an opinion that the Nuisance Removal Acts are very imperfect; have you any suggestion to make as to amending the Nuisance Removal Acts as part of the consolidated Act?—My only suggestion is that in any legislation for the removal of nuisances it should be made perfectly clear where the nuisances are to be removed to. I do not know any other suggestion, but that in any case no act to which persons have been accustomed should be forbidden unless some proper substitute is provided.

4534. You seem to have a general opinion that the Act rather tells persons what they ought not to do than points out to them what they ought to do?—Yes, that is my opinion.

4535. Have you any experience of other local administration besides that of Monmouth?—No, I have not had any experience of any other local administration.

4536. Have you found any general want of power or inclination to originate any work?—Yes, the want of power or inclination to originate a work arises from the necessary constitution of the local authority in a small place, from the want of knowledge and of being able to give time to originate a system, and from the fear of expense, and in many cases from self-interest. It must be well known that in a small town, those who occupy a respectable position, and have made a little money, usually invest their money in the purchase or in the building of small houses, and they are therefore very much interested in spending as little as possible on and in obtaining as much rent as possible for those houses. They therefore cannot reasonably be expected to originate works which they do not understand how to follow out, but which certainly as far as they see will have the effect of occasioning expense to them.

4537. Is it your opinion that the fear of the people of Monmouth, that if they gave up the local Act and adopted the general Act their local rates would increase, is a well-grounded fear?—I am not able to say. I have not sufficiently gone into that, because it was so decided on the part of all who were in authority there not to do anything that I did not give my attention to the point as to what the effect of adopting the Local Government Act would be. I may say that the utmost limit of the rate permitted by the local Act is invariably imposed, that is to say, 1*s.* in the 1*l.* every year.

4538. Do they always keep up to their maximum?—Yes, they always keep up to their maximum.

4539. Have they borrowed any money?—Yes, they have borrowed money occasionally.

4540. Can you state the amount?—They have borrowed it on mortgage of the rates, and paid it off by degrees. It was no great amount.

4541. Did anybody ever threaten to proceed against Monmouth for polluting its streams?—Not that I am aware of. In what I have said I had in my mind the very important bearing of any alteration in the sanitary laws. I have this opinion, that to be practicable it must not impose a heavier burthen on the locality than exists at present. That touches upon the whole system of local rates, into which I cannot go now.

4542. Do you think that 1*s.* in the 1*l.* ought to be the maximum of the local rates?—For the purposes of that local Act I should think it would be sufficient, but there are other local rates which are specified in my answer to Qu. 4481.

4543. (*Dr. Acland.*) You spoke of the Act laying down a principle of control with respect to sewerage—do you mean that you think that the Act should contain optional methods for the sewers of districts?—I am not prepared to say that the Act should contain any method of sewerage, but it should insist upon methods recognizing certain principles. As to the methods, there may be several methods which all recognize certain leading principles, and whether they were inserted in the Act or not does not appear to me to be material. So long as the Act laid down certain principles which were to be carried out under all systems, it appears to me unnecessary that the Act should specify the systems.

4544. The principle being to keep the place clean?—The main principle is pure air and pure water; the principle of guarding the streams and the springs from pollution, and guarding the air from pollution, by having proper receptacles from which noxious matters should be removed at proper times and under proper regulations. I think it would be the duty of sanitary laws in the first place to provide pure air and pure water.

4545. Have you made up your mind as to the duties to be assigned to the sanitary inspector?—Not in a sufficiently definite form. I think that in the first place the sanitary inspector may confine himself to the carrying out of those principles, without reference to any of the medical regulations which are contained in some of the Acts, because those seem to me to belong to a separate department. I think that before appealing to scientific or medical authority a great deal may be done in respect to pure air and pure water.

4546. Do you think that the sanitary inspector then should have no duties in relation to what may be called the general health of the district?—By no means. I think that he should. I think that the primary conditions of the general health of a district are pure air and pure water, but as to the regulation of matters which require more scientific investigation I think these are also an important part of his duties, but in some degree distinct.

4547. Would you require a separate staff for every department?—By no means.

4548. Sanitary inspection generally might be carried on by the same person?—Yes.

4549. (*Mr. Bircham.*) You have had no experience in absolutely rural districts I think I understood you to say?—I have had no experience of actual management, but I have of observation, for previous to being on the borough council of Monmouth I was also a churchwarden of the poor law parish for two years, and in consequence of the state of the church-rate question there I went round personally with my colleague throughout the whole parish, which is in a large measure agricultural, for the purpose of collecting the rate, and that gave me an opportunity of observing almost every house and every set of cottages and the state they were in, and with reference to the streams, and although I have never enforced or sought to enforce any regulation there, yet I observed the state

of the agricultural part of the parish as regards drainage and sewerage and the disposal of sewage.

4550. What local authority was in operation there?—The council of the borough, which includes the parish.

4551. Was your experience after the passing of the Sewage Utilization Act in 1865?—My observation was previously to that. The whole parish would be under the municipal authorities, but not under the local Act. The town is a small part of the poor law parish. The poor law parish is a large part, but only a part of the municipal borough. The local Act commissioners have only authority over the old town.

4552. Then there was part of the parish under no local government for health purposes at all except the vestry with its common law powers?—The whole parish would be under the town council, because it was all part of the municipal borough.

4553. Your advice is, that in any legislation which may be proposed, greater expense must not be thrown upon the locality. Is that because you think greater expenditure not necessary, or simply that it would probably further impede action?—I think that the fear of expense would lead to such resistance as could be made to any plan, and that a plan at the same time intelligible, and not expensive, would certainly be more likely to meet with success.

4554. Has it occurred to you that there should be any authority intermediate between the central authority in London and the local authority, in the hope of procuring better attention to its duty?—Yes, I think that there might be an authority such as a county authority, or an authority conterminous with the river conservancy authority, extending over a large space. I think either of those might be extremely useful. I think that it would be unnecessary, and would not perhaps be so effective to have a communication between every parish, and the central authority direct. The regulations which I have suggested to be carried out in every parish for the protection of the streams I think could be originated, and afterwards inspected much better by such an authority as a county authority, or a rivers conservancy authority, than by the central authority in London.

4555. Then the first local authority that you would keep is, as now, the vestry?—I have an objection to multiplying authorities, and that is why I said the vestry, that being an authority already existing in every parish.

4556. Have you considered whether it would be well that parishes should be grouped into unions for health purposes, each parish sending its representative to the health board as guardians are sent to the board of poor law guardians?—I have not considered that much, but it appears to me that such a regulation would be in many cases a very beneficial one.

4557. (*Mr. Richards.*) Do I gather from you that your opinion is that, whatever future legislation may be necessary, the authorities of Monmouth would hesitate to put any legal provisions into operation if there was increased cost involved?—I think that they would be unwilling to do so, and I think that the more willing the persons to be compelled may be, the more likely the system is to work. I think the element of cost is a very important one. I have a very strong opinion as to the present state of our local rating, as to its confusion and illegality; and anything which increased that burthen would, I think, be locally resisted.

4558. (*Mr. Shaw.*) You mentioned, what no doubt is the fact, that local men are very apt to be interested in house property, and therefore to have a direct pecuniary reason against making improvements—do not you think that, as regards the increase of rates at all events a proportion of that charge would come back into the pockets of the ratepayers in the shape of a very improved place, and an increased value of the property?—I think so, but I think you must make the local authorities and the individuals comprehend it. If they have it clearly before them I think that they would, in a great many cases, not object to the expense, if they saw that by laying out money in a certain way they would, in the course of a short time, escape expenses which they now pay, and in fact if they saw that a better and ultimately a cheaper system could be substituted for the practice under which they are now, if that could be clearly shown to them, I think that any alteration might be much more easily carried out. That is the reason why I think that any alteration which is carried out should be carefully devised by either a higher or a central authority, competent to point out the best and cheapest mode of carrying out the new system.

4559. Of course there are two distinct parts of the objection as to expense; one is that the rates upon everybody would be increased, and the other is that the owners of house property would have out of their own pockets to pay for the improvements; which of those do you think is the more formidable objection?—They are both very strong objections; for in general, of course, the owners of house property are also those who are likely to be liable to the greatest amount of rates. I think that the more the owner of house property can be persuaded to improve it out of his own pocket, and the less this is done out of the public rates, the better. When he sees that the money which he lays out improves his property, he will be the more willing to lay it out. My idea is that the owner of property is much more willing to lay out money of which he sees the advantage upon his own property than to pay a heavy rate.

4560. Then it comes to this: that you think that the financial objection raised by the Monmouth authorities was a mistaken one in a measure?—I think it was; but I am not surprised at it, and I can account for it, and in some degree excuse it, but my own view is that it was a mistake.

4561. Have you any theory as to any remedy which could be devised for getting over that objection by a different system of administration?—No; I am not prepared to find fault with the local authorities, but I think that too much must not be expected from the local authorities, considering how they are constituted. I think that they are to be encouraged and to be assisted, and their want of engineering knowledge and knowledge of the general conditions of health, and of the modes of disposing of sewage, may be supplied to them, and should be supplied to them, from a higher authority; and I think that when that is supplied, and when they have carried out any system which has been properly devised for them, then the higher authority should see that that system is properly continued and kept up.

4562. Then you would rather enlighten the local authority than control it at present?—I think that when enlightened any control would be more easily exercised, and in some cases less control would be required if they acted of their own accord with enlightenment.

4563. In your theory as to protecting springs and streams, have you taken account of the great amount of involuntary infiltration that there must be from roads and other surfaces, independently of the direct fouling of them by privies and so on?—Yes; I look upon that as part of the natural surface drainage of rain-water and other water into streams, which probably it would be difficult to prevent, but would be hardly necessary to prevent if the main means of fouling the streams were removed.

4564. But do you not think, for instance, that the character of water might be very much deteriorated by the infiltration of organic matter, of dead leaves, horse manure and other matters?—Yes, I think it may. I would of course protect streams as much as possible; but that is a source of injury to streams the prevention of which I have not attended to.

4565. Would you or not empower the central authority to close pumps and wells which were proved to supply noxious water charged with organic matter?—Yes, where it is clearly noxious I certainly would.

4566. What I would suggest to you is whether your theory as to the natural supply by streams and springs

is not adapted to a natural state of society, but when you come to towns, you come to a highly artificial state of things, for which, as it seems to me, you require a more artificial supply.—I think that some towns might require a much more artificial supply than others, and that there are some towns where the natural supply, if let alone, might almost answer the purpose, according to the locality and the geological conditions of each. I am not wedded to any one system of water supply.

4567. (*Mr. Powell.*) Having regard to the deficiency which exists in this country at the present time in house accommodation for the poor, and likewise having regard to the fact that the increase of that accommodation to any sufficient extent cannot be expected to take place, except the new houses are remunerative as speculations, do you think that the builder of each cottage house ought to be compelled to go to the expense of erecting a privy and so forth for each house?—No, I do not think that that would be absolutely necessary.

4568. Your previous answer would lead to this, that the local authority ought to see that the accommodation of that class is sufficient; not that each individual house should be supplied with separate accommodation?—Yes, I think it very possible that there may be several cottages together in which arrangements specially adapted might be made for the cheap erection of one or more privies as may be wanted. I give no opinion as to whether every cottage should necessarily have one separate, or necessarily have a separate cesspool. I think that is a matter to be determined by circumstances. The arrangement to be made is rather to be approved of in the first instance by the local than by the superior authority, who should be convinced on subsequent inspection that it is sufficient for the purpose. But I do not think it at all necessary, that under the circumstances that you have mentioned of erecting cottages and houses at a remunerative price, so as to afford accommodation for the poor, there should be such a privy for every cottage exclusively.

4569. Did you intend that the water coming from the roof should be used for drinking purposes?—No, I do not consider that rain-water should be used for drinking purposes, but for other household purposes, and it might be desirable to have it for a watercloset, high up in the house. Water being at that height may very fairly be kept at a height where it would be available for various uses.

4570. In fact, your answer was intended to express regret that more attention was not paid to the uses of the rain-water falling on the roof?—As to the uses of rain-water it appeared to me that great trouble is often gone to for the purpose of raising water up to a height, whereas if the water were caught and stored at a height, much of that might be avoided.

4571. (*Lord Robert Montagu.*) When you recommended an amended cesspool system, what amendments did you mean?—I mean amended in point of construction and of locality, and in point of the means of cleansing and emptying and inspecting.

4572. As to the construction what would be your amendment?—The amendment in construction would be that the cesspool should be such as not to admit of soakage therefrom into the soil. Taking a row of houses, I do not consider it necessary that there should be a cesspool to every one, but it is very possible that one may serve for three, or four, or more; that is a matter to be determined rather by the local authority. I think that the drain from every house should not admit of soakage, and that the cesspool should not admit of soakage; that it should be capable of being easily opened and closed and inspected; and that it should also be so placed that carts might easily take away the contents.

4573. As to the locality, how would you propose to amend it?—I propose that every cesspool should be so placed that carts or waggons or barrows at the very least should be able to approach to it and empty it when required.

4574. The third amendment as to emptying would be this, that you would empty by means of carts?—Yes; I am thinking now of a town of moderate size, such as I have been used to, where the cesspools might easily be emptied by means of carts.

4575. Would not it be a great nuisance as well as expense for carts to go backward and forward emptying those cesspools?—I think not under proper regulations. I think in many places a farmer would send his cart to remove the contents. I think also that regulations might be made for the time and manner of cleaning out cesspools; for instance, in a crowded town those cesspools might be forbidden to be opened except between certain hours, and under the inspection of some subordinate officer of the town, and that when they are so opened that should be the time at which the contents should be removed, and of course, I assume with all assistance in the way of disinfectants and deodorizers, but I think that regulations might be made both for cleaning out cesspools and for the removal of the contents in such a way as would not be injurious to the public health.

4576. Do you think that a cesspool could be constructed so that the air should not be polluted?—It appears to me so, and I say so, because I have had such in my own grounds, and I have constructed such with reference to my own stable in a small way; so that I think it could be done.

4577. In fact, what you would recommend is the ancient system of England of scavengers and lay-stalls; by a lay-stall, I mean a place outside the town to which the excreta are carried to be deposited for the empty carts of farmers on their way home from market to take up and carry to their land?—I should recommend a partial return to that system, for I think that the objections to it do not now necessarily exist. The roads are improved and railways are carried out and other means of removing refuse to a great extent are provided, so that those evils which were incidental and not of the essence of the system might be avoided.

4578. What would a man do with the contents when he had emptied his cesspool, and when he had got it into the cart?—I think in some cases it might be removed by private arrangement, and in other cases if not by private, by public arrangement, by contract, and that it might be removed out of the town to distances where it should not be noxious in any way. I think that might be done either by carts or other means of locomotion, rather than by large sewers, and by large drainage and irrigation works, which in my humble opinion are not so good a system, and would be an unsatisfactory and a more expensive system.

4579. Your only object in making this recommendation is to protect the streams from pollution?—That is my chief object, but I consider that it also has a bearing upon the supply of manure to the country.

4580. You suggest that every parish should protect the streams in its area from pollution, but that there should be an over-riding authority to see that the parish did its duty?—Yes.

4581. Then you were asked what authority you proposed, and you said a county authority or else a rivers conservancy, or in other words a watershed board; have you considered which of those would be the better one?—No, I have not considered that sufficiently; my general notion was that some authority extending its powers over a wide space, over a great many parishes, should be required, but it appears to me that either one or other would be efficient for the purpose. I am not prepared to say, for I have not considered the subject whether the one would be more efficient than the other, but I think either would be efficient.

4582. Then if a parish failed to do its duty, what should the over-riding authority do?—With regard to the over-riding authority, that perhaps I have hardly sufficiently considered, but I think that whatever is to be done should be done or enforced by the over-riding authority.

4583. Do you consider that the costs of the over-riding authority in enforcing the performance of duty

by the parish should be borne by the parish or by the higher authority?—I think in the case of a parish failing to perform its duty the cost should be thrown upon the parish.

4584. Not upon the funds of the over-riding authority?—No. I think that every parish should be compelled to do its duty in that respect. What I think is that when the duty were once efficiently performed there would be very little else to do, except seeing that the regulations with respect to each house were not reversed. For instance, if a set of cottages were compelled to place the cesspools or privies properly, and also if arrangements were made by which those should be emptied at proper times, the only thing then to see to would be that that system went on, and that privies and cesspools were not replaced where they had been before.

4585. You have spoken of slaughter-houses being a nuisance. I suppose when they are scattered over a town in different places you cannot very well have them under control, can you?—I cannot see why they should not be under control, and why, if one set of slaughter-houses in a town is under control, several should not be.

4586. If you have all the slaughtering done in one place it is very easy to inspect it, and it is very easy for the officer to see that it is kept clean, but if you have a number of private slaughter houses scattered in different places then the inspection would be difficult, and it would be very difficult also to enforce cleanliness; is that your view?—It is my view; but I would entirely forbid a number of slaughter-houses over the town. I am of opinion that they should all be together. In the town where I lived there occasionally was a tendency on the part of certain slaughterers to slaughter in their own houses, but it was always prevented and penalties were threatened; it was altogether illegal and not allowed.

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4587. There is a power to stop this, is there not, on the ground of those slaughterings in private houses being a nuisance to the town and tainting both the air and the meat?—Yes, they were altogether bad. In the town to which I refer there were proper public slaughter-houses provided, which were in fact to be the only places where slaughtering should take place, and in my humble opinion that should be the case everywhere.

4588. You recommend, do you, the adoption of the continental plan of having large public slaughter-houses and not private slaughter-houses?—Yes, I am not aware of the regulations of the continent, but I think there should be public slaughter-houses and not private ones,

4589. (*Earl of Romney.*) With regard to cesspools I understood you to say that you thought it necessary that there should be the means of communicating with cesspools by carts, or at all events by wheelbarrows, but when afterwards you spoke of the communication from the cesspool to the sewer, to what did you refer?—There should be in my notion a cesspool to one or more houses, and that the sewer or rather the drain from each house should run into the cesspool.

4590. When the chairman was examining you he asked you whether you would make the throwing of nuisances into a stream penal, and you rather avoided admitting it, but you said that you would prevent it; have you any idea of preventing it by other modes than making such an act penal?—I think it certainly should be penal.

The witness withdrew.

(31.) John Lambert, Esq., a member of the Commission, examined.

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4591. (*Chairman.*) You are inspector of poor-law auditors?—Yes, I am.

4592. You prepared the scheme for the Public Works Act, Manufacturing Districts, and also superintended its execution, did you not?—Yes; I prepared the original scheme and plan, and afterwards superintended its execution.

4593. Will you state by whom are the accounts of local boards audited?—When the local board is the town council, the accounts are audited by the auditors for the town council, who are elected by the burgesses. When the local board is a local board under the Local Government Act or under the Public Health Act, the accounts are audited by the poor law auditor of the district.

4594. When the local board is a board of guardians who does it?—When the guardians are the local authority, and the guardians pay any monies out of the common fund of the union for sanitary purposes, the amounts would be entered in the accounts of the guardians, and would be submitted to the poor law auditor. Then there is the case of the vestry being the local authority, and except in those cases where the Act 1 & 2 W. 4. c. 60, known as Hobhouse's Act, has been adopted, I am not aware that there is any audit of the accounts required. I should state that there are some instances of vestries being incorporated under local Acts, and those local Acts sometimes contain a provision for the appointment of auditors; or rather, I should say, for the election of auditors by the vestry themselves.

4595. Under the second head, namely, the local board under the Local Government Act, and the third head, where the local authority are the guardians, are the poor law auditors the same in both cases?—They are the same in both. Under the 7th and 8th of Victoria, chapter 101, sect. 32, the Poor Law Board are empowered to divide the country into audit districts, each district comprising a certain number of unions, and the same Act also authorized the chairmen and vice-chairmen of the several boards of guardians in each audit district to elect an auditor. But with regard to the election of auditors law the has recently been altered, and the auditors are now appointed by the Poor Law Board.

4596. How are the borough auditors elected?—The borough auditors are elected by the burgesses, or those inhabitants who are entitled to vote for town councillors.

4597. (*Lord Robert Montagu.*) Is any ratepayer a burgess, or what constitutes a burgess?—Those persons who are entitled to be on the burgess roll under the Municipal Corporations Act.

4598. What is the qualification of a burgess under the Municipal Corporations Act?—Every person who has occupied a house, warehouse, counting-house, or shop within the borough for a period of two years and eight months prior to registration, who has been an inhabitant householder in or within seven miles of the borough, and who has been rated to and paid all rates during the period of his being in occupation of his qualification, with the exception of those becoming due within the last six months.

4599. There is a bill before Parliament now to alter that, is there not?—Yes, I think it is intituled the Municipal Franchise Act. It shortens the occupation of the qualification to a period of one year, it does not require that the occupier shall be a householder, and it enables females to vote. It has passed the House of Commons and it has gone up to the House of Lords.

4600. (*Chairman.*) How are the poor law auditors appointed?—Now they are appointed by the Poor Law Board, and they are civil servants.

4601. What are their powers under the Poor Law Board?—The auditors are enabled to make surcharges and disallowances in the accounts, and to require the production before them of the accounts and vouchers of the boards of guardians, and of the various parochial officers in the several unions and parishes in their districts.

4602. What are their powers under the Local Government Acts?—Their powers are stated in the Local Government Act of 1858, section 60. They have

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the power of making disallowances and surcharges; they can recover their disallowances before the justices, and they can require the production of books and vouchers.

4603. Those powers are substantially the same, are they not, as those under the Poor Law Acts?—Yes, as far as the auditor himself is concerned. He has the power in both cases of requiring the accounting parties who come before him to sign declarations, and if their declarations are untrue they are subject to penalties which the auditor can enforce.

4604. What is the amount of the annual expenditure under the local boards?—I have no very recent return of the amount. In the return which was made to the House of Commons, No. 16 of 1866, I find that the total expenditure of those local boards for the year 1864 was 611,000*l.*, but since that period several other local boards have been established, and the expenditure is probably greater now than it was then.

4605. (*Mr. Richards.*) Does that include all local boards, whether municipal boards or boards of guardians?—I am not quite certain, but it includes all those authorities acting exclusively under either the Local Government Act or the Public Heath Act, but not boards of guardians.

4606. (*Chairman.*) Can the Poor Law Board prescribe the duties of the auditors under the Poor Law Acts?—Yes, they are empowered to do so, with regard to certain matters which are not prescribed by statute, and the manner in which the audits shall be conducted.

4607. Is that the case under the Sanitary Acts?—I am not aware of any such powers under the Sanitary Acts. I believe that the Secretary of State has no such power, in fact I believe that the whole of the duties of the auditor under the Sanitary Acts (meaning by the Sanitary Acts, the Local Government Act, and the Public Health Act) are those duties which are prescribed by section 60 of the Local Government Act of 1858.

4608. To whom do the auditors of the poor law report?—The poor law auditors report to the Poor Law Board. They are required by the regulations to report upon the accounts of every union and parish officer after each audit in a form prescribed by the Poor Law Board; and I should state that the Poor Law Board have power also to prescribe the forms in which the several accounts of the unions and parishes shall be kept, and the auditor reports whether or not the accounts have been kept in those prescribed forms, and, if not, what the defects are, and any other irregularities with regard to the accounts of the union which come under his notice at the time of the audit.

4609. To whom do the auditors report under the Sanitary Acts?—The auditors under the Sanitary Acts are only required to report to the local board on the spot. A few of them report, I believe, occasionally in cases of surcharges and disallowances to the Home Office, but with those exceptions their reports are confined to the local board itself. There is no power, as far as I am aware, to prescribe any forms of accounts, or indeed to require that the accounts shall be kept even in books, and instances have been mentioned to me where the local authorities have presented their accounts to the auditor on mere scraps of paper.

4610. Has the Secretary of State no jurisdiction over those auditors under the Sanitary Acts?—I think not. The poor law auditor is *ex officio* auditor under the Local Government and Public Health Acts I am not aware that the Secretary of State has any jurisdiction over him, and it is very questionable also whether the Poor Law Board have any jurisdiction over him with regard to his duties as auditor under the Sanitary Acts.

4611. Does not that create a great want of uniformity?—No doubt it does cause a great want of uniformity. In many instances local authorities have been anxious to have forms of accounts prescribed for them, but there has been no power to do so.

4612. What appeal is there against disallowances and surcharges?—The appeals from disallowances and surcharges under the Poor Law Acts are to the Poor Law Board or to the Court of Queen's Bench. The appeals against surcharges and disallowances under the Sanitary Acts are to the Home Secretary instead of the Poor Law Board. In the case of appeals to the Poor Law Board the Poor Law Board have power, either by themselves or their inspector, to summon the parties before them, and to examine them upon oath with regard to the merits of any matter in connexion with the appeal, but there is no such power vested in the Secretary of State.

4613. Can the Secretary of State remit a surcharge?—Yes.

4614. But he has no power to inquire upon oath?—He has no power to inquire upon oath, nor, as far as I am aware, has he any power to summon any party before him or before his representative.

4615. What control has he as to the salary of the auditors?—He has no control at all. The Act of Parliament prescribes that an auditor shall be entitled to receive 2*l.* 2*s.* for every day in which he is employed in his audit, and he is also entitled to a reasonable sum for travelling expenses. I am referring now to the 21st and 22nd of Victoria, the Local Government Act of 1858.

4616. Is that 2*l.* 2*s.* the maximum?—No, that is the minimum; nothing less than 2*l.* 2*s.* for every day.

4617. Must the poor law auditor reside in the district?—No, he is not obliged to reside in the district. Some of them reside beyond the district, and I may state perhaps here that questions of some importance have arisen as to the right of an auditor to charge his travelling expenses In the year 1865 the two audit districts of Cheshire and Derbyshire were united and were then placed under the jurisdiction of one auditor, and the auditor lived at St. Asaph in Wales. There are six small local boards at Matlock and in the neighbourhood, and he claimed to be entitled to have separate travelling expenses for coming up to hold those audits. The six chairmen of those local boards sent a remonstrance to the Secretary of State, which was afterwards forwarded to the Poor Law Board, by whom the matter was considered, and there was considerable difficulty in arriving at any decision upon the question whether or not he was entitled to the sums which he claimed, but a letter was written to the auditor expressing a very strong opinion that he ought if possible to arrange to hold his audits at such a period that they might be taken consecutively, without the necessity of his returning home, or at the time when he held his poor-law audits in the neighbourhood, and that the travelling expenses should be apportioned between the places; but great doubt was expressed whether or not either the Poor Law Board or the Home Secretary had any power to insist upon such a course of proceeding.

4618. How was it decided?—I believe that subsequently the auditor made arrangements to hold those audits at about the same time as he held his poor law audits in the same neighbourhood. I remember that Bonsall is one of the local boards who complained of the charges made by the auditor. There he charged 2*l.* 2*s.* for auditing and 3*l.* 3*s.* for his travelling expenses. South Darley the same. At Bakewell he charged 2*l.* 2*s.* for his auditing and 4*l.* 4*s.* for his travelling expenses. At Matlock he charged for auditing 4*l.* 4*s.* and 6*l.* 6*s.* for his travelling expenses. All those local boards are almost close together, and it was represented that he might without difficulty have arranged to hold the audits of all of them about the same time. My object is to show that there is considerable difficulty with regard to regulating the charges of the auditors. There seems to be no adequate authority for the purpose. I am speaking of the salary and expenses of the auditor under the Local Government Act. The Poor Law Board have no difficulty with regard to fixing his salary, and the scale of remuneration under the Poor Law Acts.

4619. Both as to his personal and his travelling

expenses?—Yes, his salary, and the allowance covering his other expenses. Under the Local Government and the Public Health Acts he is paid separately by each local board. I remember an instance where the clerks of five local boards met an auditor on one day, and in the course of three or four hours he disposed of the whole of the accounts and got paid for all of them. There is great disparity in the payments that are made to auditors, and I may perhaps give two or three instances. There is the local board at Flockton, and their expenditure in the year 1865 or 1866 was only 79*l.*, and the auditor's fees were 4*l.* 16*s.* Then at another place the expenditure was 321*l.*, and the payment to him was 3*l.* 7*s.* In another place the expenditure was 151*l.*, and he got 6*l.* 18*s.* In another place, Ham Common, the expenditure was 676*l.*, and he got 6*l.* 19*s.* 6*d.* So that there is no regular fixed rate or scale of remuneration, or indeed any scale of remuneration at all proportioned to the amount of work that is cast upon him.

4620. Are the accounts of the guardians audited when they make a rate under the Nuisances Removal Act?—It is very doubtful whether they are bound to submit that account to audit at all. It is not money raised by any call upon the parishes in the union; but it is raised by the guardians as the local authority, who make the assessment themselves, and if they order the money to be collected and paid on a separate account, I am inclined to believe that the auditor would have no jurisdiction whatever with regard to it.

4621. How is the audit of the accounts of a vestry conducted when acting as a sewer authority?—I believe that there is no audit whatever.

4622. With regard to poor law medical officers, how are they appointed?—They are appointed by the board of guardians subject to the approval of the Poor Law Board.

4623. What are they in number in England and Wales?—I am not able to say exactly, but taking them in round numbers I should say about 3,000, including the workhouse medical officers along with the district medical officers.

4624. How are they remunerated?—They are paid by salary as a general rule now; but the salary is in the first instance fixed by the guardians subject to the approval of the Poor Law Board, who have the power of regulating the salaries, one half of the salary being repaid by the government by an annual grant.

4625. What is the area of their districts?—By the general consolidated order of the Poor Law Board guardians are required not to assign to any medical officer a district which exceeds in extent an area of 15,000 statute acres, or which contains a population exceeding the number of 15,000 persons.

4626. Is the entire country now covered by those appointments?—Yes, there are district medical officers throughout the whole country now. Each union if it is large enough is divided into a certain number of districts.

4627. What are their duties under the poor law?—The duties of a district medical officer are: "No. 1. "To attend duly and punctually upon all poor persons "requiring medical attendance within the district of "the union, assigned to him, and, according to his "agreement, to supply the requisite medicines to such "persons whenever he may be lawfully required to "furnish such attendance or medicines by a written "or printed order of the guardians, or of a relieving "officer of the union, or of an overseer. No. 2. "On the exhibition to him of a ticket according to "Article 76, and, on application made on behalf of "the party to whom such ticket was given, to afford "such medical attendance and medicines as he would "be bound to supply if he had received in each case "an order from the guardians to afford such attend-"ance and medicines. No. 3. To inform the relieving "officer of any poor person whom he may attend "without an order. No. 4. To make a return to the "guardians at each ordinary meeting in a book pre-"pared according to the form marked P hereunto "annexed, and to insert therein the date of every "attendance and the other particulars required by "such form."

4628. What are their duties under the nuisance authority?—If the Guardians are the nuisance authority, they may require the medical officer to report to them on the sanitary state of the district.

4629. Do they pay him for that report?—Yes, they are expressly authorized to pay him for that report.

4630. What Act is that under?—That is under the Act of the 23rd and 24th of Victoria, chapter 77. § 14. In a circular letter, dated the 10th of October 1860, addressed by the Poor Law Board to the guardians after the passing of that Act, they say, "Hitherto the "board of guardians have not been able to obtain any "sanitary report, except as regarded the poor in "receipt of relief, unless through the voluntary and "gratuitous communications of their medical officer. "But henceforth they will be empowered to employ "and remunerate him for the information which he "can obtain and render to them in peculiar emergen-"cies, when this information may be of great value, "either in dispelling unfounded alarm or in stimu-"lating to exertion for the repression of local epidemic "diseases."

4631. Has the Poor Law Board any authority upon this point?—No authority at all.

4632. Neither as to duties nor as to remuneration?—No, it is not a matter within the scope of the Poor Law Acts, and this Act of the 23rd and 24th of Victoria, chapter 77, gives them no power.

4633. Has the Poor Law Board any knowledge of what is done under that Act?—None whatever.

4634. What records of disease are kept by those officers?—The only records of disease which are kept by the union medical officers are records contained in the district medical relief book; and the form of that book is prescribed by the order which requires them to enter the name, age, and residence of the sick person, the disease, the dates of attendance, the necessaries which he considers should be given to the patient, and the present state or termination of the case.

4635. How are those medical officers employed under the Vaccination Acts?—They are employed by the guardians under the Vaccination Acts. The guardians usually select the district medical officer, and until recently each medical officer was charged with the vaccination of persons in his own district. The guardians enter into a contract with the medical officer to attend to the vaccination in the district, and he is paid according to the fees prescribed by the Act of Parliament.

4636. Is that done by contracts with reference to vaccination?—It is done by contracts. There is a recent Act with regard to vaccination, the 30th and 31st of Victoria, chapter 84, and that Act prescribes the fees which are to be paid to the vaccinator.

4637. What is the difference between vaccination districts and medical districts?—Prior to the passing of the 30th and 31st of Victoria, chapter 84, they were usually conterminous, but under that Act the Privy Council are enabled to make regulations to secure the efficient performance of vaccination, and they have prescribed that in future in towns no district should contain a population of less than 25,000 persons. The regulation was issued on the 18th of February 1868, and it states "No part of the metropolis, or of "any city or municipal borough or town corporate "or other town, shall in respect of any future "contract form by itself or with any rural place a "separate district for vaccination except with the "approval of the Privy Council, unless it contain an "estimated population of at least 25,000 persons or "else be as much of the metropolis, city, borough, or "town as is for purposes of vaccination under the "control of one board of guardians." So that the Commission will observe that under the regulations of the Poor Law Board the district medical officer's district is not to exceed a population of 15,000 persons and by this regulation it is required not to be less than 25,000 persons.

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4638. With regard to the guardians, and their position as nuisance authorities, what control has the Poor Law Board over guardians in this capacity?—None whatever.

4639. Neither as to salaries, nor expenditure, nor works?—None whatever.

4640. Except as far as sanctioning the appointment of relieving officers as inspectors of nuisances?—Yes. The reason why the sanction of the Poor Law Board is necessary where the relieving officer is appointed inspector of nuisances is this, that by the consolidated order which prescribes the duty of the relieving officer, he is prohibited, except with the sanction of the Poor Law Board, from undertaking any other occupation. He is strictly restricted to the discharge of his duties as relieving officer; but any extra remuneration which the relieving officer receives as inspector of nuisances is determined by the guardians themselves free from any control by the central authority.

4641. Is the power of the guardians as the nuisance authority remedial rather than preventive?—It is remedial. When the guardians, as a nuisance authority, find a nuisance, it is their duty to abate it, and in that case their authority may be said to be chiefly remedial.

4642. Except in the construction of drains in which it is preventive?—Incidentally it would in that case be preventive, because if it were necessary to get rid of a nuisance by laying down a sewer or drain, of course that would not only have the effect of getting rid of the immediate nuisance, but would prevent the nuisance occurring subsequently. In that sense it is both preventive and remedial.

4643. What legal difficulties are there in the way of recovering expenditure for drains?—There is considerable difficulty with regard to the recovery of expenditure for drains owing to the ambiguity of the Act of Parliament. I am referring now to the Nuisance Removal Act of 1855, the 18th and 19th of Victoria, chapter 121. Section 22 of that Act provides that "Whenever any ditch, gutter, drain, or water-"course used or partly used for the conveyance of "any water, filth, sewage, or other matter from any "house, buildings, or premises is a nuisance within "the meaning of this Act, and cannot in the opinion "of the local authority be rendered innocuous without "the laying down of a sewer or of some other "structure along the same or part thereof, or instead "thereof, such local authority shall and they are "hereby required to lay down such sewer or other "structure, and to keep the same in good and ser-"viceable repair, and they are hereby declared to "have the same powers as to entering lands for the "purpose thereof, and to be entitled to recover the "same penalties in case of interference, as are con-"tained in the 67th and 68th sections of the Act "passed in the fifth and sixth years of the reign of "King William the Fourth, intituled 'An Act for "consolidating and amending the laws relating to "highways in England;' and such local authority are "hereby authorized and empowered to assess every "house, building, or premises then or at any time "thereafter using, for the purposes aforesaid, the said "ditch, gutter, drain, watercourse, or sewer." That is the authority under which the guardians are enabled to levy a rate. It does not state whether the rate is to be levied on the occupier or whether it is to be levied on the owner. And it would seem that they are not empowered to levy this rate until after the work has been done. It has recently been laid down, in the case of the Queen against Goss and another, that they are not entitled to pay the money in the first instance out of any other fund. So that if the works are to be done at all, they must get them done upon credit. The difficulty, therefore, is great, and when the board of guardians have written to the Poor Law Board upon the subject the board have rather discouraged them from undertaking these works in consequence of the difficulty of recovering payment.

4644. Have they power to borrow?—They have no power whatever to borrow; and under this section the rate is limited to 1*s.* in the pound. The Act makes no provision as to the officer who is to collect the rate.

4645. Neither as to assessing nor as to collecting?—The assessment is to be made upon every house, building, or premises, but that is all that is stated.

4646. Is there confusion between the powers of the nuisance and sewer authorities as to drainage?—Yes, necessarily so, as similar works may be undertaken by two different authorities in the same district. I may also state, if a sewer were laid down by the vestry as the local authority, they would recover the amount by a rate upon the parish made by the overseers upon their precept, in accordance with the provisions of the Act of Parliament, which states that property of a certain class, if I remember rightly, is to be assessed at one fourth; whereas in the case of a rate made by the guardians under the 18th and 19th of Victoria, the Nuisance Removal Act, the rate would be made only upon the premises which happened to drain into the sewer.

4647. Have the guardians power to provide carriages for the sick?—Yes, they have the power to provide carriages for the sick under section 12 of the Nuisances Removal and Diseases Prevention Act, 1860, the 23rd and 24th of Victoria, chapter 77, which says that they are "to provide and maintain "a carriage or carriages suitable for the convey-"ance of persons suffering under any contagious or "infectious disease, and to convey such sick and "diseased persons as may be residing within such "locality to any hospital or other place of destina-"tion, and the expense thereof shall be deemed to "be an expense incurred in executing the said Act." That expense comes out of the common fund in unions. I should state that the Poor Law Board have no information whatever as to whether that power has been exercised or not; they have no jurisdiction upon the matter.

4648. Under the Act of 1866, section 24, it is enacted that "it shall be lawful at all times for the "nuisance authority to provide and maintain a carriage "or carriages suitable for the conveyance of persons "suffering under any contagious or infectious disease, "and to pay the expense of conveying any person "therein to a hospital or place for the reception of "the sick, or to his own home?"—That is so there, but in neither case have the Poor Law Board any jurisdiction or any information as to whether the guardians have in any instance provided those carriages or not.

4649. (*Lord R. Montagu.*) I believe the object of the order of the Privy Council, that vaccination districts should not have a population of less than 25,000, was in order that the proper vaccination from arm to arm might be carried out?—That was the object of it.

4650. Otherwise a sufficient number of children would not meet together to enable the doctor to take the virus from one arm and insert it in another?—That was so stated.

4651. I suppose that the medical districts do not exceed 15,000 persons, because the per-centage of sick in a greater number of population would be too much for the doctor to attend to?—That was the principle upon which the regulation was founded, no doubt. I referred to the subject just now for the purpose of showing that the two districts at the present time under the existing law are not conterminous. We have instances of one medical officer acting not only as vaccinator in his own district, but also in the district of another medical officer, which has created a great deal of antagonism and difficulty with boards of guardians, and has also created some ill-will amongst the medical officers themselves.

4652. But both rules are founded, are they not, upon just and true principles?—It would appear so.

4653. With regard to the area of sanitary administration, the poor law unions are not conterminous with counties in any case?—No, there are many

instances where they are not conterminous with counties, or rather I should say not within the same county. There is no instance of a poor law union being as large as a county.

4654. The areas of the local governments are not the same as either the ecclesiastical or poor law parishes?—No, they are not; at least in many instances they are not.

4655. Ecclesiastical parishes are different from poor law parishes, I believe?—They are in many cases, and particularly so in the north of England, where several large parishes were divided under the Act of Charles the 2nd into townships. Some of the ecclesiastical parishes are many miles in extent, for instance, the parish of Rochdale contains an area of nearly 60,000 acres.

4656. In some cases the ecclesiastical parish would mean one poor-law parish and in other instances as many as four poor-law parishes?—Yes, where the parish is divided into several townships.

4657. In other cases the poor law parish contains a number of ecclesiastical parishes; for instance, Liverpool is one poor-law parish, because it is a place separately assessed to the poor, and yet it contains 31 ecclesiastical parishes; and the case of Birmingham, Brighton, and other towns is similar?—Those parishes probably would have been formed under some local Act, or the ecclesiastical parishes would have been united for poor-law purposes.

4658. London contains 23 poor-law parishes and 199 ecclesiastical parishes, does it not?—The city of London union alone contains 98 parishes, but I think that the ecclesiastical and the poor-law parishes are conterminous in the city of London.

4659. And the number of poor-law parishes and ecclesiastical parishes in the counties is different; for instance, Cornwall contains 16 poor-law and 11 ecclesiastical parishes; and Kent contains 27 poor-law and 32 ecclesiastical parishes?—It is often so, especially in the north of England.

4660. The registration districts are different from all of those, are they not?—The registration districts usually embrace several parishes, and are conterminous with unions; and it is the general practice to divide a union into a certain number of sub-districts for registration purposes.

4661. In some poor law parishes there are no inhabitants, in others there are less than six, and in others there are less than 11?—Yes; I think that remark applies chiefly to some of those very small places which were formerly known as extra-parochial places, and although now generally speaking they are added to unions, yet still they are separate parishes.

4662. I believe there are 107 poor-law parishes with only one house, and not more than six inhabitants; and 467 parishes with not more than five houses each, and about 20 inhabitants?—I am not certain as to the precise number, but I dare say that your Lordship is quite right.

4663. The Sewage Utilization Act of 1865 is to be administered by the vestry; in the case of a parish where there were no inhabitants, what would be done?—At this moment I am not prepared to say; there would be no authority, I imagine.

4664. The 16th section of the Act of 1867 makes the word parish mean, in every case, a poor law parish, so that there would be a good many instances in which the Sewage Utilization Act could not be administered?—Yes, in those exceptional cases referred to.

4665. Could you suggest to us any unit of area for sanitary administration, which would be an aliquot part of any larger area now existing?—If the Commission would allow me I should prefer not making any suggestion or offering any opinion with regard to a point of that kind, as it might preclude me afterwards from discussing the subject when the whole question came before me.

4666. We must either find some unit of area which shall be an aliquot part of some larger area now existing, or else we must make new areas in the kingdom for the administration of the Sewage Utilization Acts and the Sanitary Acts?—Yes. With regard to those small parishes, the Poor Law Board have now the power of annexing them to an adjoining parish with the consent of certain persons; in that case they would form part of the adjoining parish and be subject to the same provisions as the adjoining parish. I do not anticipate that there would be any difficulty supposing it were considered desirable that the vestry should be the unit, that certain parishes having a population under a given number should be annexed to adjoining ones for those purposes.

4667. In that case there would be one vestry for the united parishes?—Yes.

4668. (*Mr. Powell.*) Instead of the term used by you, ecclesiastical parish, would it not be more accurate to use the phrase parish for ecclesiastical purposes, seeing that such parishes are recognized for ecclesiastical purposes only and not for civil purposes?—I think so, if that distinction is observed.

4669. In the discussion for the purposes of this inquiry it might be convenient to omit from consideration parishes of that class?—Yes, and when I have spoken about a parish I have intended an ordinary poor law parish, as it is generally accepted. In fact there is a definition in one of the late Poor Law Acts of a parish, as a place for which a separate poor rate is or can be made.

4670. The vestry I believe always has relation to the civil parish?—Yes, in the sense I have used the term.

4671. Going back to the period when the whole country was divided into unions, and parishes were grouped into unions, can you explain in what manner those groups were formed?—The Poor Law Commissioners sent assistant commissioners down into all parts of the country to make inquiry as to the most convenient way of arranging groups of parishes into unions, having regard to the area that it should not be so extensive as to create inconvenience in the administration of relief, and that the population of the parishes to be united should be sufficiently extensive to warrant the formation of a union.

4672. And it resulted, did it not, from that inquiry that there was a great difference in the population of those unions?—A great difference. That arose in many instances from the fact that some districts were very extensive and having a very small population in them.

4673. And where you found a population entirely homogeneous and forming one community, you would embrace that in one and the same union, although the population would be very considerable, for example in small manufacturing towns?—Yes, where there was a population which would be sufficiently large in every respect to justify the formation of a union; but then I should say that in the formation of unions there were other things which have to be taken into account; for instance, the existence of local Acts, and the difficulty of obtaining the consent of certain persons where those local Acts were in force, so that it was found not only expedient but necessary in a number of instances to depart to some extent from some of the general principles which had been laid down.

6474. Whom did the commissioners place themselves in communication with on their visits?—The assistant commissioners placed themselves in communication with the principal residents and the principal landowners in the district and the magistrates, calling together a meeting and proposing their plan, and hearing what objections there were to be made to it, and what suggestions could be offered for its improvement. Then they made their report to the Poor Law Commissioners, who under the Act of 1834 had absolute power to unite as many parishes as they thought proper into a union, except in th ose cases where parishes were under local Acts, and then they had no such power.

4675. But when they recommended combination into unions, where that combination was carried out, was regard had to local feeling irrespective of the local

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Acts?—Yes, no doubt that was a circumstance which was taken into account.

4676. They were not to unite parishes in an unwilling marriage?—That was a point which could not be ignored. Then in some instances they had to consider what provision existed with regard to workhouse accommodation in the formation of unions; that was another element which required their attention. Where they found in a particular spot that there was a large workhouse sufficiently spacious for the poor people who were likely to be received into it, they took that for the centre as it were of the union. Then of course, as far as possible, towns had to be taken as the centre of the union for the convenience of the guardians and other persons who have to attend their board meetings.

4677. I think in some cases where you had a town surrounded by a country district, you would place the town in one union, and you would place the country district in another union, although that country union formed a sort of circle or half-circle round the town?—Yes, owing to local circumstances there were some instances of that kind.

4678. That circumstance would naturally make it extremely difficult, would it not, to adopt the union as the unit for sanitary purposes?—Yes, supposing you maintained the union as it now exists, or as it existed at that time; but then there is absolute power under the Poor Law Amendment Act of 1844 given to the Poor Law Board to separate parishes from unions, and to add parishes to unions, although they have no power to break up an entire union without the consent of the guardians.

4679. (*Chairman.*) Is that power given under the original Poor Law Act?—No, the consent of the guardians was necessary under the original Act; but it was by the subsequent Act of Victoria that the consent for taking parishes from one union and adding them to another was dispensed with. The restriction that no union should be entirely dissolved without the consent of the guardians is, however, still in force.

4680. (*Mr. Powell.*) But it is competent, is it not, to the poor law authorities to aggregate certain parishes, those parishes being gathered from different unions, and so to form a new union?—Yes, quite so.

4681. Can that be done without the consent of the different parishes affected by that redistribution?—Yes, you could take three parishes from one union, and four from another, and constitute a new union altogether if it was considered desirable.

4682. Have you found in practice that it has often been desirable to redistribute parishes and form them into new unions?—Yes, there have been some instances of a certain number of parishes taken from one union and a certain number from another, and a new union constituted. There have been many instances in which parishes have from time to time been taken from one union and added on to another, for the sake of the convenience of the population of the district, and in consequence of the alteration in the relative circumstances of the parishes in the union.

4683. In all those arrangements, I scarcely need ask you, whether the Poor Law Board has regard to the convenience of the poor law administration alone?—Yes.

4684. Can you explain what powers of compelling the erection of structural works reside in the Poor Law Board?—The Poor Law Board have no power to order the erection of a new workhouse without the consent of the guardians, but they have the power within certain limits of expenditure to order the alteration or enlargement of workhouses, and they have power under Mr. Hardy's Act to order the building of asylums for the sick, and they have also power to direct the building of dispensaries.

4685. Have you found that this exercise of the central authority has been resisted by the poor law guardians throughout the country?—In some instances it has been resisted. I am not prepared to say the number of cases, but it has been found extremely difficult to enforce the power.

4686. But although the power may have been difficult of enforcement, do you think it is a valuable power and one which ought not to be surrendered?—It has really proved an impracticable power, because before going to the Court of Queen's Bench for a mandamus it would be necessary to prescribe with minute detail the precise alterations that have to be made, and the same difficulty exists with regard to dispensaries and asylums in London; it would be necesary to point out to the guardians or managers the exact piece of ground they were to purchase, which would involve preliminary negociations as to the price for the purchase. Then it would be requisite to have plans made, and to direct that the building shall be of a certain size, and so on. Without these minute and specific instructions the Poor Law Board have been advised that they would have no power by mandamus to enforce obedience to their order.

4687. The Poor Law Board or the Home Office can now, under the general Act of Parliament, demand from the mayor, aldermen, and burgesses of municipal boroughs a statement of accounts. I presume you would think it very desirable to extend that power to all the local boards?—Yes, but I think there is an Act under which the Secretary of State has a right to require returns from sanitary bodies as well.

4688. Have you heard of any cases where the auditors of local boards have detected any excess of their borrowing powers?—No, I have not. The Poor Law Board get no report whatever from the auditor, and he is not required to report upon that point to the Secretary of State.

4689. The guardians, as the nuisance authority, can impose certain duties upon the medical officers, can they not?—Yes.

4690. And I presume that they pay them out of the poor rates?—Yes, they pay them out of the common fund of the union.

4691. Have there been any cases where there has been a conflict with the Poor Law Board and the guardians in this, that the poor law guardians may think that their medical officer has sufficient occupation for his time as an officer under the Poor Law Act, and that it is not right that he should likewise be employed under the nuisance removal authorities?—I am not aware of any such complaint being made to the Poor Law Board.

4692. Has there been such complaint of their employment under the Vaccination Act?—I think not. I am not aware of any such complaint.

4693. Is it the case that medical officers are gentlemen engaged in very extensive and important private practice, or are they ordinarily gentlemen who are rising in their profession and have not very extensive private practice as yet?—That depends very much upon the place, whether it is a rural district or whether it is a town union.

4694. I presume that the duties of such medical officer are such that they would not be consistent with his having a first-class private practice?—In some of the districts of England the principal medical practitioners in the provincial towns are poor law union officers, and I know several instances of that kind, but in the densely populated towns you generally find that they are young men who have not been long in practice. It is from that class that the medical officers in large towns are mainly recruited, but I know many instances of rural unions in which the principal medical man of the town is also the medical officer.

4695. Will you look at the twelfth section of the Nuisance Removal Act of 1860, and say whether, in your judgment, the operation of that section, which deals with the provision of carriages for the sick, is not confined to cases where the Diseases Prevention Act is in force?—The section says: "It shall be lawful "for the local authority for executing the said "'Diseases Prevention Act' to provide and maintain "a carriage or carriages suitable for the conveyance "of persons under any contagious or infectious disease,

" and to convey such sick and diseased persons as " may be residing within such locality to any hospital " or other place of destination, and the expense " thereof shall be deemed to be an expense incurred " in executing the said Act."

4696. Does not that refer to cases where that Act is in operation, not to the ordinary action of the Nuisance Removal Act, but only where there is a proclamation made under that Act?—I am not prepared to say at this moment what the precise construction of this clause is with regard to the point to which you refer.

4697. (*Mr. Shaw.*) As regards the central authority making an order for setting up a building, and so forth, you wish to have another remedy; would that remedy be by an indictment where the parties did not comply?—There might perhaps be an indictment for disobedience to the Act of Parliament.

4698. If that were a better, cheaper, and more ready remedy than it is it would be preferable to a mandamus, would it not?—If it were a more ready remedy, and cheaper, it would certainly be better.

4699. Does not it show this, that the real remedy for getting obedience to the central authority is by giving a summary remedy by penalty before the magistrates for disobedience, rather than anything in the nature of specific performance compelled by the court?—It might be a readier way, but that is a matter of opinion. I may mention that in Ireland, if the guardians refuse to do what the Poor Law Commissioners order, they may dissolve the board of guardians and appoint guardians themselves, which guardians would have the power of carrying out the works. That appears to me to be the most efficacious way of doing it.

4700. Is there any other clause in this Act which gives the Secretary of State the power himself to do the act, and then to leavy a rate for it?—No, there is no other power than that to which you refer.

4701. You spoke to us of the deadlock which occurred under the twenty-second section of the Nuisances Removal Act of 1865, as to the guardians doing the work; how far is it material to consider that? is not that difficulty removed now by the power given to the sewer authority under more recent Acts?—Yes, there is power given to the sewer authority no doubt; but it is incumbent upon the guardians to remove nuisances, and if the sewer authority fail to lay down proper sewers for the purpose, I apprehend it would be the duty of the board of guardians to do so. There is the conflict of a double authority in that particular instance, and there is an old saying, that " What is everybody's business is nobody's."

4702. Practically if the sewer authority did its duty under the more recent Acts that clause would be obsolete?—Yes, it would be practically obsolete if the sewer authorities discharged their duties.

4703. You spoke of the powers given to the guardians as being remedial rather than preventive, by which you meant that they take away a nuisance instead of preventing one occurring?—Yes, I meant that.

4704. Otherwise I suppose that language has been more commonly applied to disease; all sanitary measures are preventive and not remedial, because they prevent the occurrence of disease rather than remedying disease after it has occurred?—Yes, in that sense.

4705. (*Mr. Richards.*) Do you know whether action has been taken to any extent by guardians under the fourteenth section of the Act of the 23d and 24th of Victoria, by which the guardians may procure sanitary reports and pay for them?—The Poor Law Board has no information upon it.

4706. You do not know whether that Act has been a dead letter by guardians or not?—I do not think that it has been a dead letter; but the Poor Law Board have no official knowledge upon the subject, although I myself have heard of instances in which the guardians have obtained those reports. I may mention that the workhouse medical officer is not only the medical officer for the sick, but he is also the sanitary officer for the workhouse, and he is required by order of the Poor Law Board to report half-yearly with regard to the sanitary state of the workhouse.

4707. There is no duty cast upon the medical officer at present of reporting upon the sickness in his district, is there?—No, not upon the general sickness; he is bound to report to the guardians every case of sickness which he attends in virtue of his office as medical officer; every pauper whom he attends, he is obliged to enter as a case in his book.

4708. Assuming a district where scarlatina had happened there would be no duty cast upon him to report to the guardians at their next meeting that in such and such a district there had been an outbreak of scarlatina?—No.

4709. Then although he must report the individual cases that he attends he is not obliged to report the aggregate?—No, but he frequently does if there is any outbreak of disease of that kind. I should say as a general rule the medical officer does report the fact, although it is not an obligation cast upon him.

4710. Then there is no general order by the board of guardians to the medical officer under the Act of 1860?—No; each board of guardians would exercise its own authority in that respect, and the Poor Law Board would have no power to prescribe the duty of the medical officer, because the powers of the Poor Law Board are confined to prescribing the duties in connexion with the relief of the sick poor.

4711. (*Mr. Bircham.*) Has your experience of the revision and redistribution of unions suggested that it is ordinarily a work of difficulty?—Yes, it is often a work, no doubt, of considerable difficulty.

4712. Therefore if it should be felt desirable that parishes should be grouped for health and some other purposes, it might be difficult to alter poor law unions where for physical and other reasons it was felt not desirable to adopt them as they stand for health districts?—There would be difficulties in certain cases no doubt; but the difficulty of taking one parish from one union, and adding it to another, and altering unions in that way, is certainly not as great now as it was formerly. Since the Union Chargeability Act has been in force there is a more equal charge for the relief of the poor, and therefore there is less hesitation on the part of parishes to be separated from one union and added to another.

4713. The common property would make a difficulty, I presume?—Yes; but that is capable of easy adjustment.

4714. You illustrated the inconvenience of the audit by the poor law auditors, and showed that when they were not auditing for poor law purposes the Poor Law Board have no jurisdiction over them?—No, we have not any knowledge at the present time whether those auditors who are appointed by the Poor Law Board discharge their duties properly or not.

4715. Would there be any difficulty in the Poor Law Board having authority over them when they were performing duties other than those of poor law audit?—I am not aware of any difficulty.

4716. Or in the poor law auditors performing the duties which you have been describing?—I do not see any difficulty. The anomaly is so great at the present time that it seems to me that there must be some change made with regard to it.

4717. You did not mean to convey that the duty was not one which poor law auditors could perform, but that under the existing state of the law you have no sufficient control over them?—Quite so. I have no doubt as to the ability of poor law auditors to discharge the duty.

4718. The Poor Law Board has to approve the appointment of the medical officers by the boards of guardians, and their salary. Is there any principle by which they guide themselves as to the amount of salary?—Yes, the population, the area, and the extent of pauperism are all taken into account in considering the question of salary; but it is not often that the

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Poor Law Board interfere with the guardians in that respect, excepting on occasions where the guardians endeavour to reduce the salary.

4719. But where the guardians appoint in the first instance at a salary which is itself an insufficient remuneration for the area and population over which the medical officer has that duty, does the Poor Law Board interfere to insist upon a higher salary?—Where it is quite clear to the Poor Law Board that the salary is insufficient they would not sanction that lower salary; they would require some increase to be made in it.

4720. Is there any scale in existence?—No, I should say it is a matter very much left to be determined by the guardians according to the circumstances of each locality.

4721. In speaking of the annual expense of local boards you gave the figures 611,000*l.* Is that exclusive of town populations acting otherwise than under the Public Health Act or the Local Government Act?—Yes. If I remember rightly it does not include the expenditure of any other local boards, except those that are under the Local Government Act and the Public Health Act, whose accounts are audited by the poor law auditors. I think that none of the improvement commissioners' expenditure is returned, but I am not quite certain.

4722. Then that would be a very insufficient measure, excluding as it does such places as Manchester and so on?—Yes.

4723. At all events, that excludes the whole of the expenditure by sewer authorities?—Certainly.

4724. Can you tell me what time was occupied by the assistant commissioners in mapping the country into poor law unions?—It was a work of very considerable time; in fact, the work is only just now being completed by the dissolution of the few remaining Gilbert's unions. There were a considerable number of unions formed within the first few years after the establishment of the Commission, and the Commissioners and the Poor Law Board, have gone on from time to time forming fresh unions, but I am not able without reference to state the proportion or number with respect to time.

4725. Were those difficulties due to existing complications occasioned by previous legislation?—They were due in many instances to local and special Acts, and they were due also in other instances to the determined opposition of the people to the new poor law system, particularly in some parts of the north of England.

4726. (*Dr. Acland.*) Could you tell us what is the relation of your medical officers to the registration officers, are they ever the same persons?—Sometimes they are the same persons.

4727. Do you know whether that is considered by both parties, both by the Poor Law Board and by the Registration Office to be a good arrangement, or the contrary?—I am not able to answer that question.

4728. Has it come within the knowledge of the Poor Law Boord that in districts where there have been great sanitary improvements, pauperism has diminished, that being a fact which is constantly stated?—I think we have no returns that would show that: at least, no returns have been made up with that object.

4729. So that in fact, although your medical officers are generally engaged amongst the poorest class of the population, you have no adequate return of the relation of their sickness generally to the population at large?—No, except as indicated by the number of pauper patients whom they attend.

4730. Could you say whether the returns which you require them to make up are very burthensome to them?—Poor law medical officers frequently complain of the books that they have to keep.

4731. Could they be simplified?—I am inclined to think that they might be to some extent.

4732. Without much trouble could your medical officers become sanitary officers in the way of making returns of disease generally? In public institutions, for instance, could they have further work of that kind given to them, or is the staff really insufficient?—It would be adding a good deal in some cases to their present duty.

4733. How far could the existing medical staff under the Poor Law Board be utilized as sanitary officers?—The existing poor law medical officers have great facilities for ascertaining the state of disease in their districts, because they are visiting every parish in their district constantly, and many of them are visiting not only paupers, but other classes of the population. It is a necessity with them to go over their district perhaps once or twice a week, and therefore, as a rule, I should say that the district medical officers would have greater facilities than any other medical men for ascertaining the sanitary condition of the district.

4734. In truth, I suppose it is not an overstatement to say that in all the rural districts in England the union medical officer, as a matter of fact, does know the general sanitary condition of the district?—I should say so, beyond all doubt.

4735. It is not part of their duty, but it is the fact, is it not?—It is the fact. As I have stated, they frequently do report and communicate to the guardians the sanitary condition of the district.

4736. And it is also the fact, is it not, that in many districts the principal medical practitioner is one of the union medical officers?—Yes, very often.

4737. There have been great complaints in the journals about their salaries; do you know what is the cause of those complaints?—Medical men in a large number of instances consider themselves insufficiently remunerated.

4738. Have you any way of fixing a higher scale, supposing it to be desirable, or does that depend upon the guardians?—It does not altogether depend upon the guardians; the Poor Law Board have power to order an increase of salary if they should consider it necessary to do so.

4739. If the Board imposed the burthen of sanitary work upon them, it might think it right to increase their salary?—They would require remuneration, no doubt; but what the guardians say, where they are required to increase the salary of the medical officer, is this, why should we be required to give a higher salary? we have five or six other duly qualified practitioners who are quite ready to undertake this work at the same salary. I have, however known instances where the Poor Law Board have required that the salaries should be increased, and the guardians have been obliged to do so. Since the government grant was made from which half the salaries of the medical officers are paid their salaries have been considerably increased, and I must add that owing to the operation of Mr. Hardy's Act which has thrown all the salaries of the poor law officers in the metropolis upon the common fund, the increase has been very considerable.

4740. Are there many instances of your officers being debarred from private practice or having no private practice?—There are some instances, but they are not numerous.

4741. Do you wish to encourage that or not?—My own individual view is rather against their being precluded from undertaking private practice, for the truth is that they undertake private practice in spite of the restriction.

4742. Have you the power of subscribing to general hospitals?—The guardians of unions have the power.

4743. And they constantly do so?—Yes, frequently.

4744. Can the guardians also build hospitals, for instance, fever hospitals, not in the metropolis, but in rural districts?—Yes, they can build contagious and infectious wards in connexion with the workhouse premises.

4745. Would the Poor Law Board allow the guardians to take cases upon payment into their hospitals?—That has never been allowed in England, and I am not at all prepared to say what the poor law authorities here would be disposed to do; but it is not an uncommon thing in Ireland.

4746. For instance, if I had scarlet fever, do you think it likely that they would take me in on payment, or would they simply refuse to receive me?—They are not empowered to do so, even upon payment; they could not take you in, you are not a pauper, you are not destitute.

4747. So that there might be a fever ward quite empty in my district, and it would be impossible for me even upon payment to relieve the neighbourhood of my infectious presence by being received there?—Yes, in strict law that would be so; but that law does not exist in Ireland, for a short time ago, when I was at Navan and going over the workhouse and the fever hospital there, the authorities told me that even students from the ecclesiastical seminary when they had fever in that establishment went into the fever wards of the workhouse and paid for going there.

4748. If there were an empty fever ward close by me it must continue to remain empty, and you do not, although I might pay any sum, dare to let me be received?—Perhaps in a case of that kind the guardians might judiciously break the law.

4749. So that in that respect the Poor Law Board at present does not much assist us as sanitary authorities?—They have no power to do so.

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4750. With regard to your mode of medical inspection, you have an accomplished and eminent medical inspector, Dr. Smith, who is called medical inspector of rural districts, could you say what are his duties?—He has the examination of the general dietaries and the sick dietaries. In case of inquiries, in which the conduct of medical officers is impugned, it is his duty, if the Poor Law Board require him to do so, to sit as one of the inspectors, and he also examines the sufficiency of plans and designs for the improvement of workhouse accommodation for the sick, and advises generally upon medical questions which come before the board.

4751. Would he be also empowered or required to report on sanitary works which are executed under the Nuisance Removal Act?—No, he would have nothing whatever to do with that.

4752. Supposing there was a suspected case of poisoning in a workhouse, would it be a part of his duties as an expert to give any opinion about it?—He might be sent down if the Poor Law Board thought it desirable to examine into the case and to report to them upon it.

4753. In short, you might apply to him for an opinion on any point requiring medical knowledge of the highest kind?—Yes.

The witness withdrew.

(32.) Edward Henry Pember, Esq., examined.

E. H. Pember, Esq.

4754. (*Mr. Powell.*) You are in practice at the Parliamentary bar, and in the course of that practice you have had considerable experience, have you not, in private bill legislation in matters affecting the public health?—Yes, I have been concerned in several bills, particularly the East London Waterworks Bill, the River Lee Conservancy Bill, and the Cray Valley Drainage Bill of this session.

4755. May not the Lee Act be stated very shortly as enacting that along the entire valley of the Lee sewage matter is not to be admitted into the river, and into the navigable portions of the river no solid matters?—That is so in a general way. There was, if I remember rightly, an exemption made in favour of Luton as to fluids, Luton having spent a very large sum of money in certain works.

4756. The statement is accurate with certain exceptions in favour of certain towns which were allowed to discharge their clarified sewage into the stream?—Yes.

4757. The governing body was representative in its character, was it not?—Yes.

4758. The different interests in the valley of the Lee being represented?—Yes, I believe so.

4759. You reside in the neighbourhood of Hatfield, do you not?—I do.

4760. Have you had experience in the carrying out of certain works there?—Yes.

4761. What is the acreage of the parish?—The acreage of Hatfield is about 13,000.

4762. And the population?—About 4,000.

4763. What is the population of the town proper?—The population of the town proper is about 1,300 or 1,400; there are about 300 houses, none of them very large.

4764. Could you tell the Commission, as shortly as you can, what has been done at Hatfield?—Some years ago, that is to say about the year 1865, I think it was, the drainage of the town had got into a very bad state; the drains themselves were good, but the outfall for the drains was most imperfect; it was limited to a very small and a very rough work which the late Lord Salisbury had carried on for some years, and which had done very well before the drainage of the town had increased, which had been the case of late years, but was found at last to be very inadequate. After considerable trouble we induced the parish authorities, that is to say, the board of guardians, to form themselves into a sanitary committee for the purpose of carrying out the Nuisance Removal Acts. At that time, as honourable commissioners probably know, there were no remedial statutes except the Local Government Act, 1858, and the Public Health Act, 1848, in so far as it still existed, and the statutes that depended upon them, the four smaller statutes of 1865, 1866, 1867, and 1868 had not been passed. It was with very great difficulty that we could get a sanitary committee appointed, but we did at last, and they did the best that people in their position could do according to their lights to carry out something like an improvement. However, nothing that was worth doing was done in the matter; a sum of 1,000*l.* or 1,200*l.* was spent, which irritated people very much, and they set to work to abuse the sanitary committee of the board of guardians. The sanitary committee then discovered (this was about the year 1867) the existence of three of those smaller statutes, to which I have alluded, and they were very glad to shift their own responsibility on to the vestry generally as the sewer authority under those statutes. The consequence of this was that a vestry was called and a committee was appointed under section four, I think it is, of the Act of 1866 to carry out the powers of the vestry with reference to those statutes. I was chairman of the committee myself, and the very first thing we did was to discover that the vestry had made a great mistake in constituting the committee as they had, because they had constituted the committee entirely of persons resident close by the village or in the village under the impression that they were bound to carve out a district from the parish for rating purposes under section 5 of the Act of 1866. I showed them that we were not bound to carve out a district under the Act, and therefore I said You had better postpone all action till you have seen what the vestry will do. Then the vestry carved out a district shortly afterwards, consisting of the village and nothing else. I in common with very many other people, felt that to be very unfair. It did not press very heavily upon me, but it did upon others, so we appealed to the Secretary of State, and the Secretary of State sent down the inspector in the ordinary manner, and he changed the district from one of 30 acres to one of over 1,000 acres. That district is now supposed to be in working order. They have constituted another committee of persons resident within that area, and they endeavour, as far as they can, to carry out the provisions of those four statutes. I have not been at Hatfield since the beginning of the session of Parliament, so that I cannot say exactly what they are doing at this moment. But with regard to those transactions, which I have given the Commission some-

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what at length, the great point that struck me all through was the shocking amount of hot blood, and rancour, and bad feeling, and odium, and invidiousness of one sort or another that the peculiar construction of those statutes brings about; and that I think is a very great flaw in them. I think that the fact that it is left to people to fight out among themselves, first of all as to whether they will apply the statutes at all, and secondly as to the way in which they will apply them, whether they will have a district or not, and what the size of the district ought to be in the first instance, is productive of a great deal of local harm.

4765. As far as regards the machinery of the statutes you would not suggest any defect?—No, I think that so far as the detail of those statutes is concerned if they were taken in connexion with the Public Health Acts of 1848 and 1858, over which I have gone from time to time very carefully, a very good statute might be made out of them.

4766. You were concerned, were you not, in the Cray Valley inquiry?—Yes I was, and with regard to that I may say that I think that bill exposed the evils of the present system very well. In the first place in itself, as far as the scheme went, it really was a very good scheme, although I was professionally opposed to it, and I believe was mainly instrumental in throwing it out. But it never would have come into Parliament at all if those who promoted it, who really I do believe intended well in its promotion, had felt that the four statutes as they stood were workable, but they had an area to deal with which was constituted of seven or eight different parishes, and it was felt that the wants of those parishes, though in many respects dissimilar, called for some comprehensive scheme of drainage for the district. But it was absolutely hopeless to suppose that they could go to eight different vestries and to eight different parishes and induce them all to combine in forming themselves into that district and rating themselves. Their error, however, was that, without taking proper measures to ascertain whether or not the parishes would consent to combine, they went into committee with a bill to force them, and the consequence of their coming for that bill was a tremendous contest, in which there was perhaps a rather worse amount of hot blood and rancour than what I have described as having taken place at Hatfield; and I think that unless the public law is so altered as to make it easily adapted to the wants of a rural district, you will have a constant flood of those private bills introduced into Parliament, which will be productive of a great deal of delay and a great waste of money, they must have wasted several thousand pounds in the fight over that Cray Valley Bill.

4767. Your objection to the bill is mainly this, that it proposed to enforce a combination of parishes by private legislation, and you think that that combination ought to have the sanction of and be enforced by some authority having jurisdiction for such purposes over the whole country?—I do, most distinctly.

4768. Can you explain any powers which were sought for in that bill which are not contained in the general statutes?—Yes, there were one or two, of which the promoters made very great capital, and so far they were improvements upon the public Acts. The first one was that there was power to expand a district, that is to say, to expand the rateable area, which power is not under the four statutes to which I have referred. I daresay the Commission well know what can be done under the four statutes. If ever the boundaries of a district are to be altered, either to be made larger or smaller, or if there is to be a combination of more districts than one, then the parishes in which the enlargement is to be made, or in which the combination is to be effected, are to consent through their ratepapers in vestry assembled to any such enlargement or combination, and then they are to go to the Secretary of State to get his sanction for it. This was felt to be a very cumbrous method of proceeding, because the occasions would probably be very numerous on which it would have to be done. The promoters of the Cray Valley bill therefore proposed to take power under their bill that whenever any of their branch sewers were brought within a certain distance of a house, they should immediately be able to rate the owner or the occupier of that house as the case might be. I had to cross-examine Mr. May, the solicitor for the bill, who has given evidence here I believe, and I said to him at once, there is a flaw in your position here, because although your drain might be within a certain number of feet, the house might be a certain number of feet below it, and so might not be able to use that drain, and yet would be liable to the rate, and you would be bound to rate it or the other ratepayers would cry out if you did not. He owned that that was a flaw, but it was a flaw which might have been set right; and I think that on the whole the provision was a good one if it had been modified, because it was in the direction of making the district what I may call self-expansive without constant reference to the Secretary of State.

4769. Were there not some special powers with regard to rating?—Yes, there was power with regard to rating; under these four statutes the joint boards managing joint districts have no direct power of rating, they are obliged to go to the different vestries of all the parishes which are included in their joint district, and get them to rate themselves according to a quota.

4770. The general Act gives certain powers to the sewer authority in a special drainage district for rating purposes, and the Cray Valley bill gave the same power, did it not, to the authority to be constituted under that bill with regard to the Cray Valley?—It did, and they were able to rate direct.

4771. Do you think that that would be a convenient amendment of the law?—I do think it would be a very good amendment indeed.

4772. Passing from those two cases to the law generally, you have stated, I think, that the Local Government Act as amended by other Acts and the Sewers Acts would form together a useful code?—Yes, I do think so.

4773. Would you proceed to enact your new code after abolishing those statutes?—I should propose to enact a large and comprehensive statute, to meet all the circumstances of what I may call the rural districts. There is no doubt that the great difficulty is the multifarious character of the instances which you have to deal with. You have large villages and small villages, you have highly concentrated populations and scattered populations. Then you have the difference of soils; some soils are such as will take the drainage of 100 people per acre, and some are such as will only take the drainage of about 25 people per acre. Then you have some neighbourhoods that have rivers which they are bound to avoid; others have watercourses into which they could drain with advantage, and others again have neither rivers nor watercourses; sometimes, as is the case at Hatfield, there is a peculiar subsoil which enables you to get rid of all your fluid sewage by passing it through sand cores in the chalk after you have separated it from the solids; but some places have no porous subsoil and do not know what to do with their fluids. These are so many different conditions which have to be met, but I think they might be met by one comprehensive statute.

4774. Would you repeal the Nuisances Removal Acts?—No, I would not repeal the Nuisances Removal Acts, but I would do this, I would keep them alive, in order that whenever there was a place which was not yet brought under the action of the new statute, they might be applied to those places until they were brought under the operation of the statute.

4775. Supposing, by an effort of imagination, that the Acts to which we have referred were repealed and that the Nuisance Removal Acts were not repealed, but were in force, what state of things would you bring about by that legislation? First of all will you describe your central authority?—I would have a central authority, which we will call by the name

which it did bear while it did exist, a general or public board of health, some such authority as was constituted by the Public Health Act of 1848. Work-under that general board there would be a number of superintending inspectors, and those inspectors should have districts allotted to them. In fact the whole of the country, generally speaking, should be mapped out into districts for the purpose of sanitary inspection, over each of which districts there should be a superintending inspector, very much as the inspectors of schools are at this moment, and it should be the duty of those inspectors to report as to places that wanted drainage, and the class of works that was wanted, and as to places where there were inchoate works going on, and as to whether those works were good or bad; and also of course as to places where there were works in full operation. We will take, for instance, a place where drainage works were wanted. The inspector having made up his mind that that was a place which wanted such works, should also make up his mind what kind of area would be most convenient for the purpose of creating a district, and carrying out those works in it. He should report to the central board, and the central board should send him down in order to hold an inquiry on the spot, so that he might hear all the pros and cons of the matter, and having received his report, they should then, if they agreed with it, promulgate the fact that such and such a district with such and such an area was created.

4776. Then would you propose that in this area so worked out there should be constituted a local authority of a special kind having special powers?—Yes, a local board to manage the district so constituted; but subject to the supervision and correction of the General Board as instructed by the superintending inspector.

4777. The rest of the country being under the jurisdiction of the nuisance authority much the same as now?—Very much; but I contemplate that eventually, as occasion required the whole country would be, practically at least, mapped out, into districts which would be subject to the jurisdiction of such local boards. I should except from the operation of the statute corporate towns and cities, and places where there are at present improvement commissioners or other analogous bodies.

4778. But you would leave the private Acts in full operation where they exist?—Yes.

4779. I presume you would give the local board the larger authority which you have described?—Yes; you cannot have too comprehensive a statute. One is perhaps rather fond of saying that the powers in a statute are not like clothes that are often too large to suit people; it is very easy to make them too small; the statute should be a large comprehensive statute, and the proper analogy to it should be an elephant's trunk, that is capable of rooting up an oak tree and lifting up a needle; and that might easily be managed. For instance, if you give all sorts of powers for making waterworks, for digging wells and reservoirs, and carrying out sanitary works upon a larger or a smaller scale even to the inhabitants of the smallest possible village, they would not for their own sakes, because they would have to pay for it, put in force those powers more extensively than they were obliged. The danger always would be that they would put too few of the powers into execution; and lest they should put too few into execution there would be the superintending inspector to urge them on, and to report to the central board.

4780. Would you clothe all these local authorities with all the powers of the Act?—Yes, remembering that whenever the inspector did not see it necessary to carve out such a district or to have such a local board created, you would then have the Nuisance Removal Acts still in operation, and have the sanitary committee of the board of guardians to do any little rough work of cleansing, draining, and so on that may be needed.

4781. You would not, I presume, take the parish as the unit?—There is no such fallacy as looking upon the ecclesiastical parish as the proper drainage unit. Ecclesiastical purposes and sanitary purposes are totally beside each other. Look at the parish of Hatfield, which is about six or seven miles long and includes two or three watersheds of every possible kind of level. Why should that be made a drainage unit? If Hatfield ever comes to be built over, which it might very well be, as it is only 20 miles from London by road and 17 by railway, it must necessarily be cut up into half a dozen districts for the purposes of drainage.

4782. (*Chairman.*) Do you propose therefore to make the drainage common to the whole district?—Yes, those sanitary measures I think should go together. Take for instance Bexley Heath, which was one of the parishes proposed to be included in the Cray Valley scheme, and many places, which do not want any systematic system of drainage, but if they want sanitary measures I think those sanitary measures had better be carried out by the same body that would carry out the system of drainage if it were wanted. Bexley Heath is covered all over with isolated houses, many of them very small. There are little properties which have grown into existence by squatters on the heath within the last 100 years. Every house has its cesspool and every house too has its little patch of garden, which is cultivated by the owner to very great advantage as a market garden. They grow an enormous quantity of strawberries there, and those strawberries are all made as good as they are by the fact that the contents of the cesspool are taken out whenever the man wants to use them, and are thrown over this little bit of garden. That being the case it would be a monstrous thing to deprive that man of the advantage of his own private sewage. You do not want any system of drains in such a case. All you want is somebody, some officer of this local board, to go round and to see that such a cesspool is kept in good order and that it does not defile a well, and that the fact that the owner is allowed to use that sewage for his own privates uses is not abused; that sort of rough and ready means would be excessively handy in a neighbourhood of that kind. And remember also that in neighbourhoods where there was not even a local board at all created, they would still have the Nuisance Removal Act.

4783. (*Mr. Powell.*) Do you think there should be anything in the nature of a county board?—I do not; it does not seem to me that it is very much better than the old parochial idea, and in fact it is only an amplifying of the old parochial idea. One great reason that prevents those statutes from working well is that nobody likes to incur the odium of enforcing their adoption in a neighbourhood, and therefore I think that the motive power ought to be spread over a larger area than if it were cast upon a county board. At present we know that ratepayers do hate anything which involves spending money, unless it is for a good that is not only obvious but is acknowledged to be so by them, and they hate those who by any means directly or indirectly force such expenditure upon them. It would be a most invidious position for any country gentleman to hold to be a member of such a county board.

4784. I presume before a district was carved out on the report of the inspector you would give the people in the district a hearing?—Yes; there should be an inquiry; the inspector should have the power, and in fact should be obliged, to hear any persons who were aggrieved or thought themselves aggrieved by the district that he had proposed to carve out. In fact it is an Englishman's right to be heard by himself or by counsel for the protection of his own interest.

4785. Would you have the same authority for the purpose of the whole of the district with reference to the highways?—I would; and that I think is a point which is worth consideration. I presume that the Commission know what the last Highway Act is, and how it works. The whole of a county can if it pleases create itself a district under the Highway Act and have a highway board. Of course, where there is the means, if all the parishes in the county become a

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district under the Act they are represented upon the highway board by their waywardens. I think that when a district is carved out as it would be, out of a parish that district should immediately become for highway purposes, that is to say, for the purposes of the Highway Act, independent of the parish in which it lies or the parishes in which it lies if it lies in more than one, and that the chairman of the local board to be created by the Act should be *ex officio* its waywarden to represent it on the county highway board.

4786. What would be the constitution of your local authority?—It is necessary always to bear in mind that I throw over the parish as the unit altogether; we will say that we are going to make a district of some 3,000 acres or 500 acres, as the case may be, which runs over the boundaries of some three or four parishes. A very careful plan will have to be made of the district and a list of persons inhabitants of the district who would be ratepayers in it for the purposes of the Act. Those ratepayers would elect a committee, which should always be as small as possible in number, which should be called the local board for the district. I should myself propose as a matter of convenience that the election should be biennial, not annual. I think that where such a local board was elected it would be found more convenient that they should have a longer term of office. Indeed I should prefer triennial to biennial election.

4787. Would you propose that the whole number of members should go out at the end of two years, or that half should go out each year?—I should propose in a small district to have no more than three members. There would be larger districts which would naturally have to be entrusted to a larger number of men; but supposing a small district with a minimum number of the committee for the local board, I should propose that one man went out every two years, that is quite often enough, or you will never get the work well carried out.

4788. You have also expressed your opinion that the Public Health Act of 1848 appears to be a good basis for a more comprehensive and more permanent statute?—Yes, I think that a great mistake was made when Parliament receded from the general principle of the Act of 1848, and that general principle I take to have been this, that people should have no prescriptive right to remain dirty. Then you had your General Board of Health that could enforce the adoption of the Act upon them practically, and that I think to be good. I think that the very retrograde step of saying that people shall say themselves whether they will do anything is bad. Let them say themselves, subject to the supervision of the proper authority, how they will carry the thing out, but let the nation insist that that which is requisite shall be done in some way or other.

4789. How do you propose that the central authority should act upon the local authority, supposing the local authority were either inactive or acting in a very foolish manner?—I think if that were the case the general board should send down an inspector, and should hold a proper inquiry, and if they found that that was the case they should warn the local board and tell them what in their opinion ought to be done, and if they did not do it within due time, according to the circumstances of the case, the general board should have the power of doing the work themselves and charging the ratepayers of the district with it.

4790. Would you propose that those authorities when once constituted should be able to combine so as to extend their area?—Yes; I think the very largest powers ought to be given to the inspector to recommend the expansion or the contraction of a district or the combination of two or more districts together. But just as I would not allow people to say whether or not they will make a district in the first instance, or whether or not the thing shall be done, so I would not allow them to be the judges as to whether there ought to be a combination or expansion or what not. I would not run the risk of local jealousy, or local apathy, or anything of that kind, running counter to the needs of a great nation.

4791. I gather that you would still say that there should not be this combination without giving the people of the district, either as individuals or through their boards, an opportunity of making a representation?—Certainly not.

4792. Having said thus much in general, could you explain to the Commission more in detail the defects which you think there are in the present statutes?—Yes, I think I can, but a great deal of what I should have said has been anticipated by the general remarks which I have made. For instance, I think, as you will gather from what I have said, that the consent of the people being necessary for the adoption of those statutes is the most flagrant fault in them. Then the next thing which I think bad is this, that supposing they are adopted, and supposing that a parish, such as Hatfield for instance, had by its vestry carved a district out of itself, there is no provision in the statute for limiting the jurisdiction and the management of that district to the people who are concerned in it. For instance, I think only one-tenth of all Hatfield is at this moment a district under the Sewage Acts, but at this moment the ratepayers of the whole 13,000 acres remain masters of the situation, and can say exactly what shall be done in that little district. It cannot be right that persons who do not pay should be entitled to manage.

4793. What section do you refer to?—It is in the Act of 1866. There, if you look carefully at the sections, you will see that section four gives power to the vestry, which is the sewer authority all through the Act, to delegate its powers to a committee, and section five gives power to the sewer authority, which is the vestry again, to form a special drainage district, and then there is nothing whatever to show that when a special drainage district is carved out in a parish that the term Sewer Authority alters in any way at all; the sewer authority remains just what it was, the vestry.

4794. The jurisdiction of the sewer authority over the special drainage district is not lost by the formation of the district?—Not at all, and that is very unfair, it strikes me. Another defect is one into which I would rather not go now, because it would take an enormously long time, but I think that the powers for the purchase, sale and lease of lands are imperfect and complicated. You will find that there are certain powers, given by the general and other Acts of Parliament, given to those sewer authorities by reference. I think it would be a very much better thing at once to pass a short clause saying that local boards shall be allowed to buy, to sell, and to lease lands like ordinary individuals without a licence in mortmain. There is a clause of that kind in one of the public Acts relating to this subject in those very words.

4795. How would you deal with the compulsory powers of purchase?—Then there must be another clause regulating the compulsory purchase of land. They should have power to purchase by compulsion, I think; but whenever they did purchase there should be an arbitration, and that, I think, cannot be conducted better than under the terms of the Lands Clauses Act, which has been found to work very well, and all the clauses for that purpose might be incorporated in the statute.

4796. Is there any other detail which you could mention to us?—Yes, there are several other details. There is the power of indirect rating, which is the only power that at present joint boards have which I think bad. It ought to be made direct, and they ought to have the power of directly rating all the district under their care. That imperfection is in the Act of 1867. The Act of 1866 gives certain powers to districts to join themselves together, and the Act of 1867 amplifies those powers considerably. The Act of 1866 did not limit them as to their rating powers, but the Act of 1867 did. The 13th section of the Act of 1867 says that a joint sewerage board shall in the united district have the same powers, except the power of levying a rate, as an ordinary board would have.

That seems to me, with all deference, to be an absurd bending to the will of the different parishes again.

4797. Have you in mind the 14th section, which deals with expenses?—Exactly. "Any expenses incurred by a joint sewerage board in pursuance of "this Act shall be defrayed out of a common fund to "be contributed by the component districts in proportion to the rateable value of each district, or in "such other proportion as the said Secretary of State "may, with the consent of the sewer authority of "each component district, by order determine." Very true, but that section is merely directory. Supposing a joint sewerage board sent to the four or five different parishes that constituted its district, and said, "Now you rate yourselves;" and supposing they said that they would not, it would be very difficult to compel them without very cumbrous law proceedings.

4798. Under the fifth section of the Sanitary Act of 1866, where there is a special drainage district there are powers, are there not, to levy rates directly?—No doubt.

4799. As I understand you you think that a like power should be given to a combined district?—No doubt.

4800. Or to the district which you describe?—No doubt.

4801. Does that exhaust your list of recommendations?—It does as far as one would attempt to tinker the statutes without remodelling them; but if one came to remodelling the statutes, then I think one would be able to suggest a great number of additions to powers and alterations in powers, and I am prepared to go through the two principal statutes of 1848 and 1858, making references to those four statutes also as I go along, section by section, and I would show distinctly to the Commission what statute I would draw if I had to draw a statute at this moment for the use of Parliament. I have made out a scheme of the sections of the Acts which I would propose to enact, and also stating what modification should be made, and what I propose to repeal, and I will with pleasure make it out for the Commission. I will head it as I have headed it here. "Suggestion for a new statute, based upon the existing "Sanitary Acts, and explained with comments upon "the said Acts section by section." Those are the Public Health Act of 1848, and the Local Government Act of 1858, and one or two minor statutes, which I need not name, which have been explanatory or amplifications of those two Acts, and those four Acts, the Sewage Utilization Acts of 1865 and 1867, and the two Sanitary Acts of 1860 and 1868. The Commission will no doubt observe that I do not think that this question has any connexion whatever with the Nuisance Removal Acts, for this reason, that as I said before I would leave them in existence for all places which were not absolutely brought under the domination of what I might call the main governing Act.

4802. Why should not your proposed Act apply to all parts of England, so that the Nuisance Removal Acts might be abolished?—I would apply it to all parts; that is to say, I should begin to map the whole of England out into districts for the purposes of inspection, and then as occasions required I would map out any bit, and I would bring it under the operation of this general statute into a district; but of course there are many places which have not yet got to that stage, and for those small places I think that the Nuisance Removal Acts would still afford very good rough and ready sort of remedy.

4803. When those districts are covered with houses you think that the Nuisance Removal Acts might be useful?—Yes.

4804. When you speak of mapping out the country, you merely mean roughly mapping it out?—Yes, for inspection.

4805. Not that arising from the careful adjustment of metes and bounds?—Not at all; it is just this, you have got England now mapped out for the purpose of the inspection of schools and factories, and for registration. Supposing I had, we will say, a dozen inspectors who took three counties on an average a piece, so that they might travel all over them and look after them in the course of the year. If the 12 inspectors were too many, and an inspector could do more than an average of three counties, we might have fewer inspectors, but let them go round and see how the work was getting on. For that purpose you would map out the country at once; and it would become gradually mapped out for the purpose of sanitary measures, as occasion required; and every bit that was so mapped out in the last-mentioned way would immediately be taken out of the range of the Nuisance Removal Acts; and I would have a clause in the statute, saying that every place created a district under this Act shall be exempt from the operation of the Nuisances Removal Acts.

4806. Should you not be afraid of your new rating areas clashing with the still remaining parochial areas of rating?—I should not. If one thinks it over I do not think there is any fear of that kind; you see the only purpose for which such a district would be rated otherwise than for the purposes of this Act would be just simply for the relief of the poor, and nothing else. Everything that could not be done under the Nuisance Removal Acts I should take care should be done under this statute. Also there should not be anything under the Nuisance Removal Acts that I would not put under this new statute.

4807. Do you think that the result of this system would be that the passing in each session of local Acts would become almost obsolete?—That would be so; only I would not abolish the existing Acts.

4808. It should require a very strong case to be made out, should it not, before the legislature would pass a local Act dealing with sanitary matters?—I think it should.

4809. (*Chairman.*) Do you think that your plan could apply to towns as well as rural districts?—No; I do not feel prepared to apply it to cities or boroughs. I have not included them, and for this reason I am not prepared to throw over altogether, fond as I am of centralization, the idea of local self-government. I think that it should be preserved wherever there is a fair chance that its uses would come out and its abuses would not. I think that in large towns, cities, and boroughs those uses do come out and the abuses do not come out, but I think that none of the uses come out in rural places, whereas very nearly all the abuses do.

4810. In the terms rural places do you include small towns?—Yes, I would include small towns; I should be inclined to include every town that was not a borough. I think that the mere test of population is not a very good test, it is always arbitrary, and is a hard and fast line; and there are all sorts of questions when that line is approached which are very inconvenient. And when one of those small towns which I have just mentioned grew to be large it would be always in a condition to apply to the Queen in the ordinary way for a charter of incorporation, and that would take it out of the statute.

4811. (*Dr. Acland.*) Should you include in the general statute any reference to medico-legal subjects? Would your inspectors be experts in those subjects also?—Yes, I think that would be a very good thing.

4812. Otherwise the inspection would be incomplete; it might be perfect to a certain point, but it would be of course incomplete for the purposes of a complete code of public health?—I think so too. I think myself that the inspectors as a body should be made up as far as was possible of two or three classes of men, of experts. For instance, supposing we had a dozen, I should like some to be engineers, and I should like some to be doctors, and then I think they might assist one another very well.

4813. What would you say about an analytical chemist?—Yes, certainly an analytical chemist would be a very good man; such a man as Professor Wray for instance, I would take as a type, or Professor Taylor; or as Mr. Bazalgette and Capt. Tyler as engineers. But I had very nearly forgotten to say what I

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was very anxious to say, that I think one reason, as far as I can ascertain, why the Public Health Act of 1848 became so unpopular was that there was an idea throughout the country, and I believe not altogether unfounded in fact, that those who inspected were allowed to carry out the works that they recommended, or at all events to have an interest in them, direct or indirect. Now if that be the case, of course it must be a terrible temptation to them to recommend too largely, and that of course ought to be seen to.

4814. You have paid so great attention to these questions that I will ask you this: Have you considered the relation of river basins to an organization of this kind; how would you deal with the floods and mills? You have a district for instance flooded in two or three different parishes, and one district might be willing to remedy the evils and the next might be unwilling, would you place them under one general body with compulsory powers?—Yes, certainly.

4815. That class of evils could not be remedied unless the country is so arranged that river basins should be put in order as a whole?—Yes.

4816. Otherwise such questions as that of the Cray Valley arise?—Yes, in going through the statutes, section by section, when it came to the section for the combination of districts I most distinctly should include words which would give the general board power to compel the partial expansion and partial combination of districts.

4817. Legislation for river basins is absolutely necessary though they may not necessarily be the best sanitary districts for all purposes?—By no means.

4818. But for some purposes you would admit that it is necessary?—Yes, but not for all, but I think that a partial combination would be one of the most valuable elements in any new statute.

4819. Is not that provided for under the Conservancy Acts now?—No, not adequately. There would be immediate clashing between the conservancy board and any local board such as might be constituted under those existing Acts or under the Act which I suggested.

4820. (*Mr. Whitbread.*) Have you looked in the statute which you have proposed rather to increasing the central power and diminishing that of the local authorities?—I have.

4821. You have thought, of course, who would be the responsible minister in Parliament for this central board?—Yes.

4822. Whom do you think that should be?—I think there was a very proper provision made, not in the statute itself of 1848, that the chairman of the General Board of Health should be allowed to sit in Parliament, and I suppose that meant that he was encouraged to sit in Parliament. But if he were not in Parliament, then I think that the Home Secretary should be responsible.

4823. You know the system of parliamentary government very well; do you think that the plan would work well in which the Home Secretary was responsible for ordering improvements of this sort all over the country?—I should not hold him responsible in that way; he should only be nominally so. He certainly ought not to be responsible in that sense.

4824. Do not you think the pressure, which would be brought to bear upon the Home Secretary, in consequence of having this central board, for whom he was the mouthpiece, taking up a vast number of improvements, would be so great that he would very soon give a hint to the central board not to be so vigorous?—I would not let him be at all responsible in that sense. If questions have to be asked, it would be convenient that they should be asked of the Home Secretary, but I would not go an inch beyond that.

4825. Then you would have that department really without parliamentary responsibility?—If that was felt to be a difficulty it might be met. There are departments now that practically have no parliamentary head; for instance, the Loan Commissioners, how can you say that they have any parliamentary authority except through the Chancellor of the Exchequer.

4826. What you want is to move the local authorities; if the reports of the inspectors whom you have suggested were annually laid before Parliament, and those places that were very backward in sanitary measures were constantly brought under the pressure of public opinion, do not you think that that would be a more healthy motive power in the long run than trusting to a simple office?—I do not see why you should not combine the two things. I do not see why it should not be the custom to publish annually those reports, and in fact the proceedings of the board itself, to Parliament I confess that the question of responsibility to Parliament is one that I have not gone much into. It had been suggested to me that it should be merely managed by a regular department like the Board of Trade; but I think that the great difficulty there would be that it is a bad thing in matters of this sort, as a rule, that you should be changing your chiefs so often. Of course if it were managed by a regular department, the chairman of the General Board of Health would probably be the minister, and I think that would be a very good thing; he would be turned out of office perhaps before he had had time to carry out advisable measures. Still, I have no insuperable objection to the general board being a ministerial department. This question is, however, rather beyond the scope of my inquiries.

4827. I think you suggested that three members should be the rule upon the local board, and not more?—I said that of course the number must vary according to the size of the district and the extent of their responsibilities, but I would always have the number as small as possible, so as to secure as great as possible concentration of responsibility.

4828 Those members would be elected, I presume?—Yes.

4829. You know the sort of men that get elected to that kind of office very often; have you ever thought over the question whether a diminution in the number does not give greater temptation to jobbery as well as other evils?—I think that there is plenty of temptation to jobbery now when there is no inspection, but I think that the inspection by a superintending inspector, would go on after the construction of the district, and whether the works were inchoate or finished, or whether they were in full operation or in partial operation, would still go on. And the inspector would always be able to report as to the way in which the works were being carried on to the general board, and the general board upon those reports would be always ready to take care that what was done was properly done, and to prevent jobbery.

4830. All merely sanitary matters in the country ought, you think, to be under one central board?—I do think so, but I think for the idea of local self-government in such rural places I would substitute the idea of what I would call local self-management; I mean that I could leave it to the members of the local board to manage and even to select the measures which should be carried out, subject to the correction, if need be, of the inspector and the central board.

4831. Ideas even upon this subject change very rapidly; supposing your central board insisted that the whole country should be drained upon the watercloset drainage principle, and it was all arranged upon that principle, what position would the central board have stood in if a new set of people arose and said that that was an entirely wrong system of drainage?—That is putting a very extreme case, and I should be bound to say that if it really did come to this that the whole system of waterclosets was shown to be bad, and that the system of earth-closets was so much better, that it ought in the opinion of competent people to be substituted for the other wherever the first existed, then I should go the length of accepting the dilemma which you put, but I do not think that it would ever arise. I think we ought to be very chary, and the local board probably would be very chary, of putting the district to expense for the purpose of introducing changes; but my notion is this, that you must govern the country in these matters somehow, and I think it is better that

it should be governed, as far as rural districts go, by a central board, who have no small jealousies and no small unwillingness to spend money and so forth, than that it should be governed by a class of men, by whom as we know it is now governed, namely the small ratepayers, who are the least intelligent, and the least likely to spend their money for anything except the most palpable self-advantage. At present the public will of a rural place is usually the will of the meanest.

4832. (*Mr. Powell.*) To revert to the Cray Valley scheme, had the conservators of the Thames nothing to say to the promoters desiring to discharge a quantity of offensive matter into the river Thames?—The conservators of the Thames did oppose the bill nominally, but they were settled with before the bill came into committee, and as I understand it they considered themselves sufficiently protected by clause 21 of the bill which was this: "The board on the one hand "and the conservators of the river Thames, the Metro- "politan Board of Works, and any local board or body "of commissioners or others having any jurisdiction, "power, or authority within any part of the district "respectively, or any one or more of them, on the "other hand may from time to time make, enter into, "and carry into effect agreements with reference to all "or any of the purposes of this Act;" and by the next section it is provided that "Notwithstanding anything "in this Act contained it shall not be lawful for the "board to discharge or cause or knowingly suffer to "be discharged into the river Cray or Crayford "Creek any sewage or refuse or other matter which "shall be offensive to the senses or injurious to public "health." Their plans as they were deposited, only showed a power to make an outfall into the Cray, and this section confining the use of that outfall to matters which were not offensive or injurious to health was supposed to be enough for the conservators of the Thames, and I think it was.

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4833. Do you think that there was nothing in those sections which was at all a violation of the Thames Conservancy Act?—I know that at the time it was said by some people that the Thames conservators had not been sufficiently on the look out to have a strong clause put in, but I confess that I did not agree with them.

The witness withdrew.

Adjourned to to-morrow at 12 o'clock.

Tuesday, 29th June 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL of ROMNEY.	The Right Hon. LORD ROBERT MONTAGU, M.P.
The EARL of DUCIE.	FRANCIS SHARP POWELL, Esq.

(33.) JOHN BAILEY DENTON, Esq., examined.

J. B. Denton, Esq.

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4834. (*Chairman.*) I think you have for 20 years been principal engineer to the General Land Drainage and Improvement Company?—I have.

4835. And you have recently been appointed acting engineer to the Towns Drainage and Sewage Utilization Company?—I have.

4836. Have you also during 20 years had to report, and advise, and also written works upon many of the subjects which come within the scope of our inquiry?—I have.

4837. I believe in the year 1843 you assisted the late Mr. Philip Pusey in extending the Act which he obtained for charging landed estates with borrowed money for improvements?—I did. The reason why I made a note of that to put into your hands was this: that that Act established what is called the "plus value principle," and established also the practice of charging properties improved with the cost of the improvement, repayable by instalments, which principle has been carried out in relation to towns and the improvement of their sanitary condition.

4838. Would you explain what you mean by the "plus value principle"?—The plus value principle is this, that no improvement can be charged upon property, unless the improved value resulting therefrom, which means income in most cases, is greater than the charge by which the principal monies are repaid. The "plus value principle" is a term now recognized all over Europe; it has become naturalized in its English form in France and Belgium. Mr. Pusey's Act was the first that established that principle.

4839. Will you state how, the principle being established that towns may not discharge their refuse into streams, this principle that you speak of has been applied to the conveyance of sewage to lands for irrigation?—It is a great object, and one with which I presume this Commission will have to deal, to facilitate as much as possible the acquiring of money for sanitary improvements, for the improvement of small places particularly, although all places of course will receive your attention. It is a matter of very great moment that the improvement of land by the application of sewage to it should be facilitated by borrowing money for the laying out of that land, and for the erection of farm buildings suitable for sewage cultivation upon that land. I communicated with the Inclosure Commissioners to elicit from them whether they would allow lands to which sewage was intended to be applied to be charged with the expenses incident to the application of the sewage assuming, for instance, that a town brought its sewage, down to or raised it up to those particular lands, whether the Inclosure Commissioners would allow those lands to be charged with the expense of laying them out, and building proper farm buildings upon them. Their reply was in these terms: "I am directed by the "Inclosure Commissioners to inform you in reply "to your letter of the 11th instant, that though they "have had some doubts as to the power of charging "irrigation by sewage water, they think, though "sewage is not mentioned in connexion with irrigation "in the interpretation clause, that taking the two sec- "tions together with the whole Act into consideration, "a charge for such purpose can legally be made under "the company's Act." I had drawn their attention to certain sections in the General Land Drainage and Improvement Company's Act, and to certain words in the Land Improvement Act of 1864, but they in their reply have reference to the General Land Drainage and Improvement Company's Act only, and they say further: "The real difficulty of course "would be if the landowner does not supply from "any source of his own the sewage water, but is "dependent on the supply of sewage water from some "other source, or by contract with some other person "or town, the authorities of which have full legal "power to make a contract to supply the same. If "the supply of sewage water is not secured the cost "of the buildings and machinery of distribution "might be wasted." I thought that that was a point which might be considered by this Commission.

4840. What inference would you draw from that in the way of practical suggestion?—I infer from this, that inasmuch as a town cannot secure to a landowner

taking sewage from it a continuance of the supply, there would be great difficulty in obtaining money for the laying out of the land for sewage, and effecting such other improvements as would be necessary.

4841. How would you propose to give such facilities as may be necessary for raising a sufficient sum of money?—Assuming that the town brings the sewage to the land, either by lifting it to the level which would be requisite, or by conveying it to lower land, to which it could be applied by gravitation, then I would propose that the rates of the town should, for the period for which the land itself would be charged with the cost of laying it out, be a security for the loan in addition to the land itself. In the majority of cases the plus value would be sufficient, but in other cases it might not be so. For instance, if a town was not large enough to require a considerable breadth of land for the application of the sewage, but on the contrary only a small area, it would be necessary to lay that land out, and to erect certain buildings upon it. It is just possible that the commissioners might have some doubt as to the improved value, and the persons or companies lending money might have some doubt as to the security, whether in fact the land itself would be sufficient to satisfy them, in which case it would be desirable to have collateral security from the town supplying the sewage.

4842. I understand your suggestion so far as it affects the security to be offered. Have you any suggestion to make as to greater facilities in the way of choice of the lenders, either the Government through the Public Works Loan Commission or private companies?—Yes; companies who are the medium of supplying money for landed improvements find great difficulty where the amount of money borrowed is small, and in the case of towns that objection will apply equally. Villages will require but small sums; they will not run into thousands, I hope, but into hundreds, in which case the same objection which insurance companies and other capitalists feel in lending money repayable by instalments will prevail. It is very desirable that that objection should be overcome, and it has occurred to me that if towns, villages, and districts were grouped, and a central office connected with the Local Government Act office was made the medium of collecting the instalments, by which towns and districts would repay the monies borrowed, there would be positive security for the monies received being handed over to the right parties. That would be one facility, and there would be another if some plan could be hit upon of reinvesting the principal as it is paid in half-yearly instalments, so that at the end of a given term the whole principal money should be repaid. By that means the objection on the part of those who do not like to lend money at all which is repayable by instalments might be got rid of. It would be a difficult matter to carry out, but it is one which is not insuperable, and which I submit as worthy of the consideration of this Commission.

4843. You in fact propose that the borrowers should be grouped in some cases, and have a public office to deal with in connexion with the Local Government Act office, who could make the loans in instalments and receive repayment by instalments?—Such office would not advance money at all, but would receive the instalments and pay them over to the proper parties; I should propose that either by date, having regard to the time of application, or by districts, they should be grouped together, and that those towns should offer joint and several security to private capitalists or companies lending the money. The rate of interest now charged by the Public Works Loans Commission is five per cent., and I understand that they lend for a term of 20 years only. That brings the rate of instalment up to eight per cent. Other capitalists and monetary companies charge the same to towns, while there are many companies who will not listen to an application at all from a small town under a local board of health, simply because they are not corporate or municipal bodies. Unless towns are of considerable importance insurance offices and capitalists will not lend the money; and it is most desirable, either by the process of grouping or by the intervention of the Government, to receive and pay over the instalments, or by a combination of both principles that the price of money should be reduced.

4844. Do the smaller local authorities find themselves unable to borrow money in the market at lower rates of interest than the Public Works Loan Commission require, because they do not offer sufficient security?—I know that these loans are not popular with insurance offices. What is the reason I cannot exactly state, but I feel certain, knowing that $4\frac{1}{2}$ per cent. is the ordinary rate of interest charged for loans for land improvements, that the example of the Public Works Loan Commission charging five per cent. operates very unfavourably towards any less rate being charged.

4845. Do you think that the Public Works Loan Commission might offer money at a lower rate?—I am not competent to speak upon that subject. I look upon the present rate of charge as an arbitrary rule of the Government; and seeing that the same office lent under the Manufacturing Districts Act a considerable sum of money at $3\frac{1}{2}$ per cent., and extended the term to 30 years, I do not quite understand the principle upon which they only lend for 20 years, and at five per cent., to towns and rural districts for sanitary purposes.

4846. Do you also think that the limit imposed by the Legislature upon the amount borrowed is too strict?—I believe that the Public Works Loan Commission are prohibited in some way from lending more than 300,000*l.* a year, but in that I am speaking subject to correction.

4847. I referred to the amount that local boards may borrow?—I believe that amount is one year's rateable value, unless under a special provisional order of the Secretary of State, when it may be extended to double that amount, and the term from 30 years to 50. I have not fully considered that subject, but my own impression is that it is sufficient, if towns are not obliged to purchase land and turn farmers, which absorb large amounts.

4848. Will you now state your opinion as to the extent of central control, and the nature of the executive, which you think ought to exist?—I may observe that for the last 25 years this object has been much upon my mind. As early as 1842 I published a paper, and wrote an article in the "Westminster Review," advocating central control for sanitary purposes generally, as well as for drainage both of land and towns, and I then thought that the counties would be the best intermediate authority between the chief central authority, that is, the Secretary of State for the Home Department, and the executive, which would be the special local authorities. I thought that counties would be the best intermediate central authority, or, as I then termed it, and still term it, the local central authority; but my continued connexion with drainage during the whole of the period which has elapsed since 1842, has led me to the conclusion that there is no other proper division of the country than watershed divisions.

4849. Do you mean for all purposes, or for drainage only?—I am speaking of drainage and sanitary purposes generally. My reasons are simple. I look upon sanitary requirements as consisting of water supply and drainage, drainage extending beyond towns to lands in the neighbourhood of towns, and to the proper removal of nuisances, of course including the proper discharge of the sewage or the effluent water from sewage by the rivers of the country, which must ever remain the drains of their watersheds. I regard the functions of rivers as being identical with sanitary arrangements. The sources of rivers are the sources of water supply, and the discharge of rivers into the sea is the only means of freeing the country of the liquid refuse of towns which the land cannot retain.

4850. What is your opinion as to the county authority or the London authority, which would best

control and set in motion and compel to act the local authorities in every parish in England?—I perhaps was rather more diffuse than you wished me to be in giving the reason for the rivers being the basis of the local central control.

4851. We quite understand your proposal that the watershed should be the area of government, because, whether for keeping rivers from pollution or for agricultural drainage of land into rivers, it is a very natural division to make. My present question does not refer to the area; but given the area of the watershed, or any other area, I want to know what you think would be the best central authority to control and set in motion the local authorities throughout the country?—I should say then distinctly river conservancies. I produce a tabulated statement of the rivers of England.

TABULATED STATEMENT of the PRINCIPAL RIVERS of ENGLAND and WALES, of which their CATCHMENT BASINS or WATERSHED AREAS exceed in extent 250 Square Miles.

Name of River.	Length of Main Channel in Miles.	Number of Tributaries.	Total Length of Tributaries in Miles.	Extent of Area in Square Miles.	Number of Counties intersected.	Principal Town within the Area.
Arun, Sussex	51½	—	—	349	3	Arundel.
Avon, Somerset	78½	4	59¼	869	3	Bristol.
Avon, Wilts	67	1	28¼	666	2	Salisbury.
Blackwater, Essex	50	2	53	465	1	Chelmsford.
Bure, Norfolk	52¼	1	11¾	338	1	North Walsham.
Dee, Cheshire	93	4	82½	850	5	Chester.
Derwent, Cumberland	35½	1	13¼	268	1	Cockermouth.
Dovey, Wales	35	5	44½	264	2	Machynlleth.
Eden, Cumberland	70½	4	97½	916	2	Carlisle.
Elwy, Clwyd, Wales	31½	3	50	306	2	Denbigh.
Ex, Devon	58½	5	82	562	2	Exeter.
Humber, (Ex. Ouse, and Trent)	37	2	55¾	1,229	2	Hull.
Lune, Lancashire	53½	2	30½	434	3	Lancaster.
Medway, Kent	69	3	62½	997	3	Maidstone.
Mersey	68	6	187½	1,706	3	Liverpool and Manchester.
Nen, Northamptonshire	99	1	11	1,055	3	Northampton.
Orwell, Suffolk	35	—	—	257	1	Ipswich.
Ouse, Yorkshire	59½	10	580	4,207	2	York and Sheffield.
Ouse, Cambridgeshire	156¼	8	212½	2,894	9	Lynn and Cambridge.
Parret, Somerset	38½	4	106	561	2	Bridgwater.
Ribble, Lancashire	61	3	72½	501	2	Preston.
Rother, Sussex	33½	—	—	281	2	Battle.
Severn, (Exe, Wye)	178	17	453½	4,437	8	Gloucester and Shrewsbury.
Stour, Essex	61¾	2	33¾	420	2	Manningtree.
Stour, Kent	52¾	1	12	291	1	Canterbury.
Stour, Dorset	64	2	25	479	3	Blandford.
Tamer, Devon	55¾	2	31¾	381	2	Launceston.
Tees	95	10	132	744	3	Darlington.
Teifi, Wales	70	4	30	389	3	Cardigan.
Test, Hants	35¼	1	6¾	544	2	Romsey.
Thames	201¼	15	463	5,162	10	London.
Torridge, Devon	52½	2	30	349	1	Torrington.
Towy, Wales	66½	3	55	522	3	Carmarthen.
Trent and Derwent	232	13	331	3,972	7	Stafford, Birmingham, Leicester, and Nottingham.
Tweed	22	1	30	267	2	Berwick.
Tyne	35	6	154½	1,053	2	Newcastle.
Usk	76½	7	107	650	2	Newport and Pontypool.
Waveney, Norfolk	58¾		—	339	1	Yarmouth and Beccle.
Wear, Durham	70	5	66¼	455	1	Durham.
Welland, Northampton	72¼	3	78	707	2	Stamford.
Witham, Lincoln	89	4	75	1,052	1	Lincoln.
Wye, Hereford	148	9	223	1,655	6	Hereford.
Yare, Norfolk	35	4	84	533	1	Norwich.
Chichester, Hayling, and Portsmouth Creeks	—	—	—	315	—	

These river basins or watershed areas amount to 45 in number, and comprise more than four-fifths of the whole surface of England and Wales. The remaining river basins, descending to streams only three miles long, are 143 in number, and vary in size from 2,000 acres to 136,000 acres. Of these, 39 areas exceed 65,000 acres in extent, and the whole (143) do not cover one-fifth of the surface of England and Wales.

4852. What does that table show?—This table shows that some of the rivers extend into several counties; for instance, the Thames and its tributaries pass through ten counties; the Trent and Derwent pass through seven counties; the Cambridgeshire Ouse passes through nine counties. That fact has had influence upon me in concluding that counties are not the proper divisions for local central control, inasmuch as we find in practice that it is not possible to deal with a part of a river system without reference to the remainder of that system, unless we mean to produce confusion and error.

4853. Do I understand you to propose this river conservancy board as a central authority or as a local authority?—My division would be the Home Office as the chief central authority, and the river conservancy as the local central authority, all watersheds above, say, 250 square miles being divided into districts which should be subservient to the local central authority, in the same way as the town executive, according to the character of the place to be operated upon. For instance, I should make subservient to the river conservancy the districts which should be formed upon each tributary. Every tributary should, if there were works required upon it, be formed into a district, and that district should be placed upon the same level as the sewer authority of a town.

4854. I think your plan generally is very much the same as that which has been suggested to us by Mr. Rawlinson, namely, that the areas of tributaries should be the unit, each forming a district under the local authorities, that they should be grouped into watersheds under the conservancy boards, and that those conservancy boards should be

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under the Secretary of State for the Home Department?—Exactly so. In fact I had the honour of giving evidence before the Rivers Commission upon the Thames and the Lee, and I then explained what I have just now stated.

4855. Have you considered, as in such a plan you throw over altogether the parochial system, whether you would not be constituting new and separate areas of rating which might clash with the old areas of rating, which must still exist for poor law purposes?—That cannot be helped. I look upon the poor law unions as very incompetent to deal with this matter.

4856. Perhaps you would tell us a little more distinctly what you think the functions of the Home Secretary should be, and what the functions of these conservancy boards should be?—I consider the duties of the Home Secretary as the chief central authority should be the issuing and maintaining from time to time a proper code of instructions to all places, and in addition to that, I think he should be the authority to appeal to if the executive authorities should differ from the local central authorities.

4857. I suppose you would consider that the interference of the Secretary of State would very seldom be called for by the larger local authorities of the kingdom; it would chiefly be useful in the smaller and rural districts?—I think he would be very seldom appealed to at all for work, after the system was properly established. I am of opinion that his interference in works is objectionable.

4858. You mean in the execution of the works, of course?—Yes.

4859. What do you think of his first sanction for works?—I believe that it is wrong. There is no doubt that there should be a sanction, but I think that it should be vested in the local central authority and not in the Home Office, except upon appeal.

4860. In fact you would submit local works to the approval of the local central office, but you would leave very little to the London central office except appeals?—Yes; I will explain my reason for that. I believe that a local central authority would make it its duty thoroughly to understand the specialties of the river and basin under its charge, and that cannot be the case with a central authority for the whole kingdom. If you will permit me I will illustrate that by two cases within my own experience.

4861. You are going to mention cases which illustrate the interference of the Secretary of State being sometimes unadvisable?—Yes. In order to condense my words as much as possible, I have put together a short statement of the case of Hitchin, which is rather a notorious case, inasmuch as that is a town that adopted in the year 1849 the Public Health Act of 1848, and where, although works have been executed nearly 20 years ago, and a board of health has existed, there is no board of health existing at the present moment. In 1849 a petition was forwarded to the General Board of Health by the inhabitants of Hitchin, and an inquiry was made by one of the superintending inspectors of the board. In 1850 the first local board was elected, plans were prepared by an eminent engineer, and the works were executed at a cost of 14,000*l.* This scheme involved the destruction of one mill, and the discharge of the sewage into the head of another mill below it, without any provision being made for the application of the sewage, although in the report of the inspector he had estimated the annual value from the application of the sewage at a sum of 3,000*l.* The owner of the lower mill objected to the sewage being discharged into his mill-head, and he brought an action upon which he recovered damages. He found that as the sewage passed over his mill-wheel and travelled along the bottom of his garden it was extremely objectionable. And he also claimed compensation for the loss of the water in consequence of one or two of the springs which form the sources of the river Hiz, which flows through Hitchin, having been taken for the purpose of water supply, but he did not prove that part of his case. He proved, however, that the sewage injured his property. The General Board of Health recommended the application of a certain process to get rid of this objection, and the town of Hitchin adopted the plan that was recommended.

4862. (*Lord Robert Montagu.*) That was for deodorizing, was it not?—Yes. It was Mr. Dangerfield's process, and the process happened to be claimed under a patent by a Mr. Higgs, who brought a second action against the town of Hitchin. That action was successful, and then the miller brought another action, and that again was successful. He threatened a fourth action, and then the board of health, meeting on the 14th of December 1857, passed this minute: "The clerk is instructed to inform "Mr. Cooper," (their solicitor) "in reply to Messrs. "Horsley's threatening letter of further proceedings, "that the board being reduced to three members its "power of raising money has ceased, and therefore it "is virtually defunct." The case of Hitchin attracted the attention of the Legislature, and in the Local Government Act of 1858 a provision was introduced to enable a town to repair the lapse of a board of health under such circumstances. In the following year, 1859, a meeting of ratepayers was held at Hitchin, when it was proposed that a new board should be formed. That was ten years after the works were commenced. This motion was rejected by a large majority. Last year, in 1868, after the lapse of another nine years, a meeting was called to elect a new board, and the owners and ratepayers of the district were polled, when the proposition was rejected by a majority of 19 votes. I call the attention of the Commission to this case, because I believe that had there been in existence a river conservancy, with power to deal compulsorily with mills, such as I contend ought to exist, and as I believe Lord Romney has heard me say before to-day ought to be the law of this country—I say, if a conservancy board had existed at that time, with a perfect knowledge of the district with which they were dealing, and with power over that lower mill which was not dealt with, and which has been the cause of all the difficulties, the mischief which has occurred would not have occurred, and Hitchin would not be in the condition in which it is at this present moment.

4863. The case is one of a local board evading the authority of a secretary of state by dissolving themselves, and I suppose you mean that to illustrate the fact that there is in the Secretary of State's office, according to the existing system, neither sufficient knowledge nor sufficient power to enforce necessary works in connexion with drainage?—In this case the Secretary of State employed a very able man as inspector, and a very able man also was engaged as engineer; but in consequence of his practice extending all over the country, without special knowledge and power over the river with which he had to deal, the right treatment was not adopted.

4864. We have had the case of Hitchin stated to us by Mr. Tom Taylor, the head of the Local Government Act Office, as an instance illustrating the want of knowledge and power in the central office to enforce local works, which I conceive is your opinion?—It is my view, with (if you will allow me to add) a full appreciation of the talents of the engineers employed. I do not wish to pass any reflection whatever upon them.

4865. You stated that you had a second case, will you give a brief outline of it?—The next case is a very short one, and the reverse of the Hitchin case, where failure arose from the obstruction of a mill, but it even more exactly illustrates what I would say than any other. It is the case of the town of Tring. There an action has been brought very recently for the permanent loss and diversion of water power occasioned by the sewerage works, which, in fact, have been too effective, though they, like those of Hitchin, had been approved by the Secretary of State. I cannot go into particulars, being myself engaged by the town of Tring.

4866. Does not the case of Tring, to use your own words, give an instance where works, after approval

by the Secretary of State, have been made the subject of litigation in Chancery as interfering with the motive power in water supply?—It does.

4867. I think you have some suggestion to make to us as to an improvement of the sanitary byelaws, particularly with reference to small towns and villages?—I have put a code into your hands for that purpose. (*See Appendix*, p. xxix.)

4868. If you could give us any very salient points illustrative of the character of those additional byelaws which you propose, I think that would be useful?—The first point is with reference to cottages. I have felt the inconvenience myself of not knowing what would be considered proper in the building of labourers' dwellings.

4869. You would therefore make a byelaw specifying a certain space per number of inhabitants?—My idea is that every cottage occupied by the labouring classes should have certain conveniences, and that every living room should contain so much breathing space, and the same with the bedrooms. If those things were defined, those persons who are building cottages would know more what to provide, and the inspector of nuisances being on the ground would see whether the regulations were carried out or not.

4870. (*Mr. Powell.*) You meant that this should be a byelaw?—I should wish it to be a byelaw. I think it is a most important thing that it should be enforced.

4871. (*Chairman.*) I think you propose another byelaw to compel a sufficient water supply to be provided?—I do; I think that all towns and villages should be obliged to supply water, if it can be got, by public works, at a cost not exceeding the price which has been acknowledged as fair by sanitary authorities of 2*d.* per week per dwelling.

4872. Another byelaw you propose would compel every dwelling of the labouring class to have a privy—I do not say every dwelling, but there should be privy accommodation provided either for the application of water or earth, though it may not be necessary that every dwelling should have its own separate privy. It would be better of course to have it so, but it may not be necessary in poor districts.

4873. Is not that the law at present?—It is the law at the present moment that all new cottages should have a privy supplied to them; but I go beyond that, I say that all old buildings should have a privy too.

4874. Do you think that such minute provisions as you propose could be carried out and enforced by law?—I do, though I have endeavoured to avoid unnecessary minuteness.

4875. Are all these suggestions which you have made in the paper which you have placed in my hands such as you think belong rather to byelaws than to the general law?—I have termed them byelaws, but as long as they are made compulsory in small towns and villages it does not matter in what form they exist. I think, for instance, that there should be a standard of purity of drinking water maintained by a Government test. In the same way there should be a standard of impure water as it leaves towns or lands irrigated with sewage entering the streams. No effluent water below a certain standard should be allowed to enter streams, and as I have already said, the water that is supplied for drinking purposes even in the smallest village should also answer to a standard of purity.

4876. You mean that these byelaws should apply to rural districts and villages?—Yes, I have particularly applied myself to that part of the subject.

4877. But you do not think that the existing local authorities, for instance the vestry, would be at all competent to deal with such legislation, do you?—Yes, I do, if there were a proper code in the hands of persons in rural districts, and a proper inspector of nuisances (not such as now exists) at hand to receive complaints and act upon those complaints. As you have mentioned the word "vestry," I should say that in my opinion a vestry is a better sewer authority than the poor law guardians of the union.

4878. (*Mr. Powell.*) Will you explain in what sense you use the words "sewer authority," because they may be used in a conventional sense, or with the meaning put upon them by the Act of Parliament?—I am speaking of the local executive authority to carry out improvements, and to see that no nuisances exist. My memorandum explains this.

4879. (*Chairman.*) You did not use the phrase "sewer authority" in its limited legal sense?—No, at that moment I had not that in my view.

4880. (*Earl of Romney.*) You suggest that there should be a central local authority which should be very much co-extensive with the basins of rivers?—I do.

4881. Supposing that board to be appointed to administer the existing law, would they have sufficient power to deal with rivers and streams passing through various estates?—Your question, I presume, has reference to the present state of things. The Act of 1861 in which your lordship took an interest, and in which your lordship is aware that I also took an interest, has signally failed in producing those results which we who took an interest in the measure, in the first instance, expected and desired. The cause of that is this: it is absolutely necessary to form a district, and to carry out works which necessitate the maintenance of that district for a term of years, and when a district is formed it is so difficult under the Act to deal with any impediment, such as a mill, a dam, or a weir owned by private owners, that very little indeed is done under it. We want, and those who set things in motion at the time when your lordship took an interest in the matter wanted, power to remove mills without the obligation of creating and maintaining a district with paid officers for a number of years.

4882. But in this case according to your suggestion a district would be formed?—My present recommendations go to the establishment of a watershed conservancy as a local central authority, with powers to deal with mills, so that any properties or town benefited by the removal of a mill should pay the compensation due to the owner of that mill, without the obligation of maintaining a district for 30 years, or whatever may be the term such Commission would be obliged to exist to gather its rates and pay the expenses off by instalments.

4883. Then it would be of great importance that increased power should be given to such a board in order to carry out these objects, is that so?—It is so, and the river conservancy if it had the power which I am suggesting would be in a position not only to deal with mills, but in fact to effect all the improvements of the river, either by itself or by means of drainage districts extending to the tributaries of the river subservient to that river conservancy.

4884. Is it not found sometimes with regard to a stream that there is a difficulty caused in making a good line of conduit to get rid of the water, because some owner stands in the way and will not allow a new cut to be made?—It is, and the law, as it stands now, does not help us out of the difficulty. The Act of 1861 professes to deal with two objects; one is the establishment of districts and the execution of works within them, the costs of which are repaid by instalments, as I have explained, extending over a term of years; and the other object is that of obtaining easements or outfalls through interposing properties; but the process laid down by the Act is so expensive and so troublesome that I am not aware of any case in which the second object has been carried out.

4885. With a view to carrying sewage down to a place where it might be used for purposes of irrigation such a power as that would be very important, would it not?—It would.

4886. (*Mr. Powell.*) You made some reference in a recent answer to the powers given by the Sanitary Act of 1868 to the sewer authorities with reference to privies and ashpits?—Yes.

4887. Has your attention ever been called to the fact that the 51st section of the Act of 1848, which is incorporated in the Sanitary Act of 1868, refers not

B. Denton, Esq. June 1869.

only to new houses but also to houses already erected?—No, I was not aware of that fact. (*The Act having been shown to the witness*) I did not know it, and I do not think it is known generally.

4888. But having now referred to the Act, your impression is that that section does extend to houses already erected?—Yes, it would seem to give the power that I should like to see enforced.

4889. That section as incorporated with the Act of 1868 does give that power to vestries?—Yes, I see it does by looking at the Act.

4890. Granting as we all must grant that great impediments to the flow of rivers arise from mills, I presume you would be very cautious how far you interfered with mills, lest you restrain the industry and enterprise the existence of which are a great benefit to the district?—I should, and under a proper conservancy system, I believe that a greater water power could be created than now exists.

4891. Would you obtain that by a system of compensation reservoirs?—I should get it by the improvement of the streams, as well as by compensating reservoirs and by altering the position and the motive power of the mills.

4892. You would probably have conduits or ducts taken from the stream at a higher point, and gain the head of water necessary for the mill by some such means?—I have no doubt at all that if there was a proper conservancy of rivers we should originate a water power much greater than that which it would be necessary to destroy. How it would be done I cannot at this moment explain, but I speak from some knowledge of the subject, and I know that it would be found possible to create motive power to a very large extent. Before I withdraw let me state that I happen to be one of the committee of the British Association now collecting information from different sewer authorities, whether they be boards of health or any other body, and as one reason for the observation I made as to the incompetence of boards of guardians to deal with the matter, I should state that we have issued something like 300 copies of a series of questions, and we have received 67 answers up to the present moment, and those that come from boards of guardians, and I am sorry to say from some other sewer authorities, show such complete ignorance that I am justified in saying they are incompetent to act in the sanitary control of their districts.

4893. (*Chairman.*) Are you going to publish those answers or any part of them?—Yes, they will, I presume, be published by the association itself. We are a committee, and these questions, though they have emanated from that committee, are the property of the association.

4894. Will you tell us the general nature of the questions?—They are very long. They were prepared with great care, to ascertain the extent and particulars of each district, the character of the works carried out, and the results as far as they could be traced. There is one other observation which I should like to add. I happened to be in the room yesterday when one gentleman was under examination, and he referred to dealing in some new way with cesspits, by which means he said the purity of wells can be secured. Now I have had large experience in building and in drainage, and I can assure this Commission that to make a sewer water-tight so that it shall not allow any of its matter to pass into wells is the exception and not the rule. I believe that if we could make sewers water-tight it would be a great point gained; but as I know that something like nine out of ten of those that are made with the intention of being water-tight are not so, I am convinced that no rule laid down by authority could ever secure that object. Moreover, cesspools or cesspits, if they are not attended to at the right time, will overflow, and the objectionable matter finds its way into the soil, and so into the wells, instead of from the cesspool itself.

4895. You refer to Mr. Milman's evidence?—Yes.

The witness withdrew.

(34.) Mr. George Beaumont, jun., examined.

Mr. G. Beaumont, jun.

4896. (*Chairman.*) You are a ratepayer residing at East Bridgford, in the Bingham union, are you not?—Yes.

4897. In what county is that?—In the county of Nottingham.

4898. Will you state what is your business?—I am a land agent.

4899. Does your business lie principally within the union of Bingham?—I am agent for property in 14 of the 42 parishes in the union, and I receive a very considerable amount of rents there both from cottage property and from lands, considerably above 20,000*l.* a year, so that I am interested in the sanitary state of the locality.

4900. Will you give very briefly an outline of the proceedings which you took in the present year relative to nuisances existing in the village of East Bridgford?—I will. My connexion with that particular parish as regards nuisances (though I have lived in it for nearly 30 years) began in October 1866, by my being called out with five others to act upon a sanitary committee. I did not thoroughly know the law then, and I did not know that it was not a part of my duty so to act, but that it was part of the duty of the board of guardians to have appointed some proper officer.

4901. By a "sanitary committee" you mean a committee formed by the vestry under the Sanitary Act?—Yes.

4902. Elected by the ratepayers?—Yes, at a parish meeting.

4903. And having the power of local authority in the village?—My reading leads me to suppose that we had no power to act, but that the power was taken from us and given to the local board, which was the board of guardians by the Act of 1860. A great part of my case depends upon this, that the powers were taken from us as parishioners and given to a local body to carry out, and therefore we were completely without power. That was my understanding upon the point. We, that is the committee of the vestry, went out several times, and we found a great many nuisances, and we issued notices to several people. We delegated such powers as we had, or supposed that we had, to one of our members, and instructed him to act on behalf of the committee, and then the thing subsided. I heard no more of it, or what took place, until two years afterwards, and then, finding that we had a great deal of fever in the place, I wrote a letter, which is before the Commission, to a gentleman who is chairman of the bench of magistrates, asking him to bring this matter before the board, to see if we could not have something done.

4904. (*Mr. Powell.*) Before what board, the vestry?—No, the board of guardians.

4905. (*Chairman.*) I presume you mean the board of guardians acting as the nuisance removal authority under the Act of 1860?—I do. Shortly after this, two of the old committee came to me and asked me if I had an hour to spare, and if I would go through these nuisances again, assuring me that I still remained on this permanent committee.

4906. Namely, the committee of 1866, which was appointed under the Sewage Utilization Act?—Yes, the committee of the vestry. At the time of the first action of that committee in 1866, I had bought up everything in the way of Acts of Parliament, and handy books, in order to get up the question, and I had lent them to the committee and forgotten them; but when they wished me to act I remembered that they had my books, and on looking carefully through them I found that all parish offices last only for a year; and my reading also leading me to believe that the Bingham board of guardians were the authority to

carry out these Acts, and that they had to a great extent neglected that duty, I did not feel disposed as an individual, having a large family of children, to go and stir up all these things myself; but it occurred to me that I would endeavour, if possible, to ascertain whose duty it was to carry out the Act, and, if possible, to obtain what I conceived to be my rights as a ratepayer.

4907. Did you then consider that the committee formed by the vestry in 1866 died at the end of the year?—I did consider so, and my reading leads me to believe that that opinion was quite correct. I cannot turn to the passage now, as I did not bring up my books, which I have marked in all directions, but I believe that such will be found to be the case.

4908. And even supposing that the committee was not dead, you considered that your powers for removing nuisances had been transferred from the vestry to the board of guardians by the Act of 1865?—Yes, and I think even by the Act of 1860 or 1861, I forget which.

4909. Will you proceed with your narrative?—The question was brought on at the next meeting of the board (the board meets fortnightly), and I was especially anxious on account of these fever cases, hearing so much of them, and being amongst them, and knowing the distress they caused, though no actual deaths had taken place, to know what the board determined to do; and I found that on the 12th or 14th of January a motion made at the board by the gentleman I have referred to, Mr. Martin, to appoint a sanitary inspector was negatived. I have his letter to say so, but I will not produce it, for the fact is not contradicted at present. There was then, I believe, a new surgeon appointed on that day, and he was ordered by the board to inspect and report. I then drew up a notice, which you have in your hands, to the board, stating that I conceived it to be their duty to appoint an inspector, and we gave them formal notice so to do. I gave the chairman of the board a copy of that five days previously to the meeting, and I also showed to the surgeon what I was going to do.

4910. Who signed the notice?—Myself and another person.

4911. Who was that other person?—A corn factor in the village.

4912. In what capacity did you two sign it?—As ratepayers.

4913. Not as members of the committee of the vestry?—No, simply as ratepayers. Before that could be brought on it got to the 28th of the month.

4914. Of January 1869?—Yes; during which time I have only to say that nothing was done by any organized authority to prevent this fever, which had been going on for a long time, from spreading, and it did keep spreading. When the notice came before the board, on that very day I endeavoured by every means in my power to ascertain what had taken place in regard to it. I drove to the town, and I saw a person who informed me that he had been at the board meeting, that it was over, and that nothing had been done. I then immediately went home, and on the spur of the moment prepared a memorial to the Secretary of State, which, as you see in the notice, I had threatened to do. After I had written that out, and before it was sent, two gentlemen came to my office, very late at night, to inform me that the board, after a very late sitting, and after very great contention on this subject for several hours, had ultimately so far relaxed as to appoint, under my notice, an inspector for the parish of East Bridgford only.

4915. Had they up to that time appointed no inspector of nuisances?—No, never.

4916. For no part of the union?—Not that I am aware of; I never heard of such a thing.

4917. Certainly not for East Bridgford?—No, certainly not for any part of the union that I am aware of. At that time our own guardian could not act because he was himself ill with the fever. He had it very badly, as you will see by the correspondence, and a death occurred in his house. I was not satisfied that the appointment of an inspector at 5*l.* a year for the parish in which I resided was a complete answer to the notice which I had given, and therefore, a death occurring immediately afterwards in the village, I thought that I had better pursue the case as far as I possibly could, and I sent a memorial up to the Secretary of State. The case, as I am putting it before the Commission, would be more thoroughly understood by carefully reading and noticing the dates of the correspondence I have handed in. I have very little to say upon the subject except what these letters show, but I would state that I sent up this memorial, and only received a brief acknowledgment of it. They promised me a reply, which I never got, from the Home Office; and after some time my attention was again called to the subject by an advertisement, to which I call your particular attention.

4918. The answer from the Local Government Office was an acknowledgment of your memorial, and a statement that it would be referred to the guardians of the union?—Yes; I did not get the reply they promised me, and the fever abated.

4919. Do you mean to say that you did not get any further communication?—I got no further communication until I happened to see the advertisement, which is pinned to one of the letters. The purport of it was that the board were advertising for a sanitary inspector for the 42 parishes at a salary of 10*l.* per annum. It was on the 11th of this month that the advertisement appeared. I then saw that something had taken place, and I wrote up to the Home Office a letter, of which I have a copy, to Mr. Taylor calling his attention to it, and asking whether it really was the case that this was going on, and if so, whether it was not a complete instance of "how not to do it," or whether it was not "a joke," and whether he did not think that this matter ought to come before the Commission now sitting. He replied to me in a letter which I have handed in.

4920. In which he says, that issuing the advertisement you had sent him was the only thing the board of guardians were likely to do, that it was not a case in which the Secretary of State could interfere to compel the appointment of an inspector at a more ample salary; and that until the sanitary law for rural districts was amended, there were no means by which more competent sanitary supervision could be secured, and finally referring you to give your evidence to us?—Yes; you will see two letters enclosed in that, forming the correspondence which took place between the Home Office and the Bingham board of guardians. The Bingham board, as appears by the end of their letter to the Home Office, have disputed my facts, which I do not feel at all disposed to submit to, for I believe I can prove every one of them. However, there is their statement; and you will see there also a direction from Mr. Bruce, the Home Secretary, to the board ordering them to appoint this sanitary inspector whom I was applying for. That order of the Home Secretary being carried out only to the extent of applying for a person to undertake the inspection of 42 parishes at a salary of 10*l.* a year, called me upon the scene again, and then I obtained information of what was taking place, and I wrote a letter to the secretary of this Commission, which appears there, and I also wrote informing the board of guardians that I was not satisfied, saying that I considered it an evasion of the law rather than carrying it out, and telling them what I intended to do, and also informing them that one more case of fever had broken out, which I am happy to say is cured, and I do not hear that it is spreading. That brought upon me a letter to which I must call the attention of the Commission, and which I think was a very improper letter to emanate from a public board.

4921. Was this the reply which you received to your letter?

Mr. G. Beaumont, jun.

29 June 1869.

" Bingham Union Board Room,
17th June 1869.

" In reply to a letter from Mr. Beaumont laid " before the board of guardians at their meeting held " this day, The guardians beg to state they are " capable of conducting their own business without " Mr. Beaumont's assistance.

" (Signed) By order of the Board,
" JOHN MARRIOTT,
" Chairman."

—Yes, I imagine it is not very easy to write anything much more impertinent than that. I answered it as you will see, and that is the close of the correspondence and the close of my case.

4922. That ends the matter?—That ends it. I disclaim throughout the whole thing any animosity to the board, or any desire to have more than what I believe to be the just rights of the ratepayers of the district, which we cannot get.

4923. Will you just describe a little the nuisances which you have been trying to get rid of?—When this sanitary inspector was appointed we got a very active man, and a very clever officer from Nottingham, Mr. Richards, the sanitary inspector there, to come over and just instruct the new man who was appointed. Knowing Mr. Richards very well, having had a good deal of connexion with him as regards property around Nottingham, I went to him and asked him his opinion of the state of things in our village, and whether I had exaggerated it or not, and he told me, in the very strongest language he could use, he was astonished and disgusted at what he found there, and he could not have believed that such things could possibly go on unchecked in a country village; he said if such things were to be found in the very worst part of the town of Nottingham he would feel it as a disgrace to himself.

4924. We want you to tell us what the nuisances are from your own knowledge?—There are a great many.

4925. Are there accumulations of sewage in certain places without drains to carry them off, or what?—The nuisances consist in there not being any sanitary means employed at all.

4926. Are they as a matter of fact collections of sewage in heaps not carried off by drainage?—There are some places where the drainage is entirely over ground, where there is no drainage at all in fact.

4927. Are there any particular localities to which fever has more constantly attached itself than to others?—Yes.

4928. What is the nature of them?—They are generally yards thickly populated, and the owners of them are generally people who receive their rents by the week. They get all they can, and do nothing, and as for sanitary measures they never think of anything of the kind.

4929. Can you tell us the population of East Bridgford?—1,150.

4930. Do you know the acreage of the parish?—About 1,800 acres.

4931. Can you tell us the rateable value?—No, I cannot.

4932. Are the rates generally high throughout the union?—I think not higher than usual; they are about the average of country districts, perhaps.

4933. What sort of drainage is there in any part of the union?—We have an excellent natural drainage; we are 100 feet above the Trent, which runs at the foot of the village.

4934. Is East Bridgford especially badly drained as compared with the other parishes of the union?—It ought to be one of the healthiest parishes in England.

4935. Is it so?—It generally has been healthy until this outbreak of fever occurred. I was told by a surgeon who had practised there all his life that fever could not remain there, and that if a case was imported into the village it soon died out, it did not spread.

4936. What do you think ought to be done in East Bridgford to make it healthy?—We ought to have a proper sanitary inspection of the place, and the owners of property ought to be made to keep their property in something like decent order as to drainage and privies, and many other things which really without being on the spot it is almost impossible to point out.

4937. Do you think that a general system of drainage ought to be carried out by public authorities?—No, these are all local affairs. There are certain crowded parts which have no inspection and which require it very much.

4938. What kind of water supply have you?—It is very bad; we live 10 miles below the important town of Nottingham, which pours the whole of its sewage into the Trent. I am personally engaged as the agent for Lord Manvers, and also in conjunction with the agent for Mr. Musters, and we have threatened the town of Nottingham, and I believe something will immediately take place to compel them not to pour their sewage into the Trent at all. We gave them notice not to do so a year ago.

4939. What is the water the people drink in East Bridgford?—The Trent water generally.

4940. They do not drink water from wells?—The wells are very deep indeed, but Mr. Richards, the sanitary inspector of Nottingham, laid the greatest stress on the wells we have being in soil of a very porous nature, while much of the drainage is poured into holes, called dry wells, whence it is left to find its way where it likes, that is the general system.

4941. Then the result of your attempt to get a remedy for the sanitary state of East Bridgeford has been an utter failure?—Yes, the result has been only complete failure.

4942. The fever goes on?—No, I cannot say that. It died out at a certain time from a change in the weather, or from the means taken to check it. There were certain means taken to cleanse the village. What I feel as an individual is this: I have been at a very great amount of trouble to try and understand the sanitary laws, to endeavour to arrive at what I believe to be the rights of the poor people to the benefits of legislation, and having brought to bear upon the matter perhaps an ordinary amount of diligence and intelligence, I have utterly failed to gain the object I desired.

4943. What do you think would be the best authority to carry out sanitary measures in such a parish as East Bridgeford?—Certainly not the board of guardians, judging from past experience.

4944. Would you think the vestry, or a committee of the vestry, better than the board of guardians?—I think there will have to be inspectors appointed by the Government in some way or other, to examine into the matter, and see that these boards, or the parties entrusted with the power, do their duty.

4945. Supposing an inspector came down from the London office, how would the works which he recommended be carried out?—We should be able immediately to have a court of appeal. Supposing we applied to the local board to do anything, and they would not do it, we could immediately write up to London, and the London office would send some one down, the whole thing would be investigated, and proper improvements would be carried out.

4946. Supposing that was the law, what would be the best body on the spot for the Secretary of State to deal with?—I think the officers of the parish in which the nuisance existed.

4947. You are decidedly of opinion that it would be better for the Secretary of State to deal with the vestry in each parish, rather than to deal with the board of guardians for the whole union?—I should not like the decentralization which would take place by taking to pieces the union and resolving it into single parishes again. I should leave the district, and the officers for that district, but the officers ought to be controlled and regulated by a superior authority.

4948. Do you think that if the Secretary of State had the power to set the board of guardians in ope-

ration, it would then be a good local authority?—I do not think it would be a good local authority in country districts, because it is composed almost entirely of farmers. As a rule the guardians are nearly all farmers. They are great ratepayers, and their chief idea is to save their own pockets, and keep down the rates. Their popularity in their parishes depends upon their keeping down the rates.

4949. Do you think the quarter sessions might set them to work?—I should think it might do so; I think that would not be a bad arrangement.

4950. Have you ever heard it suggested?—No. I may observe that I gave to the secretary a suggestion of Dr. Domenichetti, a brother-in-law of mine, the surgeon to the recruiting office in George Street, Westminster, which he communicated to the United Service Institution, and I asked him to hand it to the chairman, for I thought it might be useful as being part of an army medical man's views upon the question.

4951. (*Earl of Romney.*) Are the cottages in your neighbourhood generally in the hands of large owners or of other persons?—Both; but a great many of the cottages are freehold.

4952. Are they generally well built, and properly provided with sanitary conveniences?—I think not, except when they are in the hands of large owners, and not always then.

4953. Do you think it would be desirable that there should be a board to have authority over persons who are building cottages, to compel them to provide the necessary conveniences?—I do; I think it would be a very good thing.

4954. As a landlord, do you find that these cottages in the country pay good interest?—No. I have let double cottages, that cost 300*l.* to build, (excellent cottages with gardens), for 8*l.* a year, that is 4*l.* each tenant. That cannot be called good interest.

Mr. G. Beaumont, jun.

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4955. Probably the effect of any such board as I have mentioned, enforcing sanitary requirements, would be to increase the cost of building?—It would certainly.

4956. Then there would be less inducement to persons to build?—I think so.

4957. Are there plenty of cottages now?—I think we have too many in our parish. Ours is unfortunately a freehold parish, and there are parishes adjoining us where the poor have been entirely banished, so that we have to maintain them. They use up the labourers, and afterwards we have to maintain them in old age.

4958. Is there a want of cottages in the parishes adjoining yours?—There are hardly any in one parish, and very few in some others.

4959. Generally there is a want of cottages?—I think so, generally.

4960. The effect of compulsorily improving the cottages would be to increase the outlay, and it would thereby rather tend to a diminution than to an increase in the number of them, would it not?—I think it would.

4961. (*Chairman.*) Who was the inspector of nuisances whom the board of guardians appointed at a salary of 5*l.* a year, and what was his position in life?—The person who had the 5*l.* salary was a farmer in the village.

The witness withdrew.

(35.) Mr. William Huckerby, jun., examined.

Mr. W. Huckerby, jun.

4962. (*Chairman.*) You are clerk to the board of guardians of the Bingham union, I believe?—I am.

4963. You have heard Mr. Beaumont's evidence?—Yes.

4964. Do you wish to make any remark upon it to us?—In the first place, about that vestry meeting, I wish to say that it was held in consequence of a notice which the board of guardians sent to each parish, recommending them to appoint a committee to inspect the nuisances in each parish. This is a copy of that notice (*producing the same*).

4965. This notice was issued in August 1866, with reference to the cholera having appeared in the country, and it calls upon the inhabitants of the union to aid the board of guardians in taking steps for cleansing and purifying dwelling houses, and so on?—Yes.

4966. And it proposes that each parish should form a sanitary committee?—Yes.

4967. There was a sanitary committee appointed in East Bridgford parish, who issued a notice for the removal of nuisances, was there not?—Yes.

4968. In October of the same year?—Yes; it originated from that previous notice. There were half a dozen of these notices sent to each parish in the whole union.

4969. Did other parishes in the union besides East Bridgford form committees?—I think they did.

4970. From the evidence we have just received, it seems that the committee of East Bridgford had not been very successful in removing nuisances?—Then they should have complained to the board of guardians; but there was no complaint made until Mr. Martin complained last January.

4971. Mr. Martin is the chairman of the bench of magistrates, is he not?—Yes.

4972. How is it that when your attention was called to the fact, the board of guardians seem to have taken no effective steps?—Yes, they did; they immediately requested Mr. Bateman, the new medical officer, to go and inspect the nuisances, and report to them. He did inspect, and sent in a general report, but he did not particularise any special nuisance.

4973. In what year was that?—Last January. At that same meeting a sanitary inspector was appointed for the parish of East Bridgford alone, at a salary of 5*l.*, according to the recommendation of the guardian of that parish.

4974. Is that the man you advertised for?—No, it was Mr. Freer, a farmer of Bridgford, who was recommended by the guardian there.

4975. What was he to be paid?—5*l.* a year.

4976. That was not very good pay, was it?—It was what was proposed by the guardian.

4977. Was any other sum proposed?—2*l.* 10*s.* was proposed as well as 5*l.*; but of course the 5*l.* was agreed upon.

4978. That did not look as if the board of guardians were very much in earnest in removing the nuisances complained of, did it?—That I cannot tell.

4979. At all events the nuisance complained of has not been practically removed, has it?—I saw the inspector yesterday, and he told me that the biggest part was removed, and the remainder was being removed. I went over on purpose to see him.

4980. You went once to see?—To see him. I did not look at the nuisances.

4981. Do you know the parish of East Bridgford?—Yes.

4982. You have property in it, have you not?—Yes.

4983. What is your opinion of the sanitary condition of the place?—I was one of those who were complained of as having a nuisance upon my property there, and I immediately sent over bricklayers to remove it and to do what was necessary.

4984. Did the sanitary committee of East Bridgeford complain of that nuisance upon your property in 1866?—Yes, they did in their way.

4985. Was anything done?—Yes, it was cleaned out.

4986. What was the nature of that nuisance?—It was an open drain in a yard.

4987. What is the general sanitary condition of East Bridgford now; are there nuisances of that sort still existing?—That I cannot tell.

4988. You do not know?—I do not know.

4989. There has been a fever there lately, has there not?—Yes.

4990. Do you think yourself that that fever may be attributed to the want of drainage?—That I cannot tell.

4991. You cannot form an opinion about it?—No.

4992. Does the particular open drain which was complained of still continue to exist?—No; it was at the side of the road, and I did not know whether it was mine or whether it belonged to the parish. I always thought it was the property of the parish, but now I have filled it in, and I shall claim it henceforward of course.

4993. To the best of your belief is East Bridgford at this moment in a good sanitary condition?—Not having been looking lately I cannot tell. I can only say what the inspector told me yesterday.

4994. As far as your own property goes you must know?—I have not seen it for two or three months.

4995. What is the state of the water which the inhabitants of East Bridgford drink?—I have a well upon my property; it is very deep, but they use it.

4996. Do the inhabitants generally drink the water of the Trent?—I should think they do a great deal.

4997. Is that water polluted by the town of Nottingham?—I cannot say; it comes from Nottingham.

4998. The board of guardians of Bingham are the authority by law for the removal of nuisances throughout the whole union, are they not?—Yes, I believe they are.

4999. Do you believe that they fulfil those duties?—Whenever there has been a nuisance reported to the board of guardians a medical officer has always been sent over to inspect it, and when he has reported that it is a nuisance notice has been given to remove it, and generally it has been removed without trouble. The last case occurred at Colston Bassett, about three years ago; then a notice was sent and the nuisance was removed immediately.

5000. Have you much difficulty with owners who do not remove nuisances when they are told to do so?—No.

5001. Do you recollect a letter which has been stated by Mr. Beaumont to have been written by Mr. Taylor, the head of the Local Government Office, in February last, requiring you to remove the nuisances which had been complained of, and to inform the Secretary of State of the steps taken?—No, we never received a letter quite to that effect. We received a letter from Mr. Taylor directing us to appoint a sanitary inspector to the whole union. I have the letter here which we received (*producing the same*). I wrote back to say that the guardians would appoint one, and they afterwards did appoint one.

5002. (*Earl of Romney.*) You wrote by order, I suppose?—By order of the board of guardians.

5003. (*Chairman.*) And at the same time you issued the advertisement to which Mr. Beaumont referred?—Yes, afterwards.

5004. How long afterwards?—It was some time after, because we meant to have the relieving officers as the inspectors, but they refused, and that delayed us a month.

5005. What are the inspectors of nuisances generally who are appointed by the board of the Bingham union?—We never appointed one before.

5006. Have you had none?—None. If any nuisance was complained of the board used to send a medical officer, and he used to inspect it and report.

5007. (*Earl of Romney.*) Have you appointed any inspector of nuisances for any other parish besides East Bridgford?—The board of guardians have not, but I believe there is one appointed in a parish called Ratcliffe-on-Trent.

5008. Within the union?—Within the union; that is another large parish with, I think, 1,200 or 1,400 inhabitants.

5009. By whom was he appointed?—I think by the parish.

5010. (*Chairman.*) Have you ever acted under the powers given you by the Act for removing nuisances at all?—I do not recollect having done so before the magistrates.

5011. You do not recollect a single instance?—No, I do not recollect a single instance.

5012. Then as a nuisance removal authority you are wholly inoperative?—We appoint an inspector at the present time, but of course his salary is very small for the whole union, it will have to be increased. I told the board of guardians so at the time he was appointed, and in a conversation I had with the chairman he said it must be increased, or else the inspector would not be able to do what was required of him.

5013. Is it your opinion that any inspector of nuisances is required in the other parts of the union?—There are some parishes that I do not go into, so I cannot tell in what state they are; but I should think that it is very necessary for an inspector of nuisances to be there.

5014. You think it is necessary?—I think it is.

5015. You suppose there are such things as nuisances existing?—I should think there are.

5016. (*Earl of Romney.*) Do the board contemplate appointing any inspector of nuisances?—They have just now appointed one.

5017. (*Chairman.*) For East Bridgford?—No, for the whole union.

5018. What do they pay him?—Only 10*l.* a year.

5019. What is his name?—His name is Edward Arnsby.

5020. What is his business?—He keeps a toll bar, he is a toll collector.

5021. How can he inspect the nuisances of 42 parishes while he has to perform his duty of taking tolls?—His wife and family can take the tolls. Toll taking is not a very heavy duty.

5022. How can he travel over 42 parishes?—He cannot very well without a horse and cart.

5023. Practically we may say, I suppose, that his inspection of nuisances would come to nothing at all?—He should inspect them, or it is of no use appointing him.

5024. Is it a reasonable supposition that a toll collector with a salary of 10*l.* a year can properly inspect the nuisances of 42 parishes?—His salary is too small.

5025. Is he a person who is likely to do the duty properly?—He is an intelligent man, who would do it properly. He is the secretary to the gasworks.

5026. Has he any other occupation besides?—No.

5027. (*Earl of Ducie.*) The present salary is 10*l.*?—Yes.

5028. You say that it is about to be increased?—In a conversation which I had with the chairman he said that it must be increased.

5029. Can you tell me who fixed so low an amount as 10*l.* originally?—It was thought that the relieving officer would do it. He goes into the parish every week, and therefore he could do it at a less expense than anyone else.

5030. Did he undertake it?—No, he objected to it, and then the guardians put that advertisement into the papers for an inspector.

5031. What is it proposed to increase his salary to?—It was not stated. I have not heard it stated.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 1st July 1869.

PRESENT:

The RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

The EARL OF ROMNEY.
The EARL OF DUCIE.
The Right Hon. LORD ROBERT MONTAGU, M.P.
Sir THOMAS WATSON, BART, M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P.
SAMUEL WHITBREAD, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
JAMES PAGET, Esq., F.R.S.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
Professor CHRISTISON, M.D., Pres. R.S.E.
WILLIAM STOKES, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

(29.) WILLIAM FARR, Esq., M.D., F.R.S., further examined.

W. Farr, Esq., M.D., F.R.S.

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5032. (*Chairman.*) What have you to say as to the costliness of the system of inquiry which you have recommended?—The registration medical officer would of course be paid, and the question is whether he should be paid out of the rates, or whether he should be paid by the families in case of his having to visit them to ascertain the cause of death, where the medical attendant had not given a certificate. In my plan I have suggested that he should be paid out of the rates, but I see no reason why he should not be paid by the persons whose families he visits, where they are able to pay him. Of course in the case of paupers the medical certificate would be given by the poor law medical attendant, and if there was any charge on the part of the registration medical officer, it would be paid out of the rates. Seeing that generally people pay for funerals large sums, the fee for a certificate would be part of that cost, and would be inconsiderable compared with the cost of other things with which they might dispense. I see Mr. Chadwick's proximate estimate of the expense for the total number of funerals in England and Wales was 4,871,493*l.* He shows that the expense of pauper funerals in London was 13*s.*, of artizans, 5*l.*, of tradesmen of the second class, 27*l.* 10*s.*, of tradesmen of the first class, 50*l.*, and of the gentry and the higher classes of people, 100*l.*, while the expense of funerals of children under 10 years of age, excluding paupers, ranged from 30*s.* to 30*l.* The average cost of a funeral, taking paupers and all classes into account, he puts at rather less than 10*l.* I put it at 6*l.*, but it would be evident from this that the cost of a medical certificate would be inconsiderable compared with the cost of the other items in an undertaker's bill. I would therefore suggest that if there were considerable objection to the plan of paying the registration medical officer out of the rates, he should be paid by the undertaker or by the person who conducted the funeral, and in that way the expense on the rates would be very much diminished. That is the only modification that I can suggest.

5033. In the case of a pauper, would the charge be on the poor rates?—The certificate would be given by the medical officer of the poor law, and where the body was visited by the registration medical officer, his fee would be charged on the poor rates.

5034. What do you mean by comparing the costliness of the inquiry with that of a coroner's jury?—A coroner's inquest costs about four guineas, taking all the items into account. In the year to which I refer, 24,787 bodies were examined by the coroners, at a cost of 72,598*l.*; that is in England and Wales, including the metropolis, and the cost per inquest was therefore 2*l.* 18*s.* 7*d.* We do not bring there into account the time of the jury, which is a very considerable sum, but I put that at 25*s.* 5*d.* This will make the cost of an inquest four guineas, and the cost of the 24,787 inquests 104,105*l.* a year. I propose that the registration medical officer should conduct a supplemental inquiry into all deaths which were not investigated by the coroner. That would, therefore, be an extension of the very ancient principle in this country of inquiry into the causes of death. The causes of death which the coroner inquires into are deaths by violence or sudden deaths; but it is of equal importance for police purposes that other deaths should be inquired into. There have been whole series of poisonings in some counties which have gone on for some time without detection, and that has generally occurred where the coroners have been slack in their duties; but those poisonings are not sudden deaths, they have often been slow poisonings. For police purposes, therefore, I hold that it is absolutely necessary now to extend this ancient inquiry, so as to cover all the deaths which occur in the country. The deaths of young children and old people particularly require this investigation.

5035. You do not suggest any alteration of the coroner's inquest, but an extension of the system?—Merely its extension, and I think that the registration medical officer might very well inquire into certain causes of death which are now inquired into by the coroner at great expense and trouble, such as deaths in prisons, deaths in lunatic asylums, and deaths in workhouses. I think those are inquiries which would be better conducted by the registration medical officer, who would be an absolutely independent man of high position, than by the coroner, and this would be a saving of expense to the country.

5036. Are the still-born registered?—Not in this country; in every other country they are registered. I think it important that they should be registered, because children born alive are now registered as still-born, and in those cases frequently there is great suspicion. The difficulty of registering still-born children arises in this way. It is difficult to say at what period of pregnancy a child should be registered. Of course in the early stages of pregnancy, and up to four or five months or six months, it is very difficult to get people to give any account of such cases; but I would draw a line, and I think it would be generally drawn by the medical members of the Commission, probably at six months, and then make it necessary that wherever a fœtus has attained the age of six months, it should be registered. I would not, however, put it in the general register, as very few particulars are required about such deaths. The death should be reported to the registrar with a certificate from the medical attendant or from the appointed officer, and that certificate would entitle the parties to bury the body. That, it appears to me, would afford great security against crimes which are now sometimes committed, and it would also secure a complete registration of the children born alive.

5037. What suggestion have you to make with regard to the connexion of sickness with mortality?—It is very important in combating disease to ascertain its beginning, and there are many epidemics which are not fatal, but yet produce a great deal of suffering and injury to the population. The other day I was speaking to the physician of one of our great public schools, and he said he had had 80 cases of measles and a great number of cases of other complaints, none of which had been fatal, but of course on looking at the registry of deaths, he found no record of those cases, and he suggested that if the health officers in charge of the health of the country were to follow disease, it would be absolutely necessary that they

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should be supplied with information, not only about deaths from disease but about the cases of sickness.

5038. Would you propose the registration of sickness?—It would be very well worth the while of the Commission to consider that question. They would find a very good model in the army of what should be done. I was on a committee with Lord Herbert and Sir Alexander Tulloch, and we went thoroughly into that question of reporting cases of sickness in the army. It had been done for a long time, but we had to suggest a return, which should be made every week, of every case of sickness occurring in the army. We made some experiments at Aldershot, and we got from Aldershot a return from every regiment of every case of sickness occurring in the week, and every sick man then suffering from disease, and it was full of interest, and had evidently a practical tendency. It showed, for instance, in one regiment, if I recollect rightly, the existence of 10 or 15 cases of ophthalmia. That disease had existed in the regiment for many years, but attention being called to it, the causes were inquired into, and other surgeons of other regiments noticed this peculiarity. The result was a diminution of the cases of ophthalmia in that regiment; and the same thing occurred with regard to syphilis. In a paper which I shall be happy to hand in, we discussed the method of getting those returns, and they are now submitted to the Commander-in-chief every week. The Commander-in-chief and the Director-General of the army thus see the progress of disease, and the progress of health in every regiment in Her Majesty's service in the United Kingdom. If such a return could be got of the civil population, it would, I conceive, be invaluable.

5039. Could you get such a general return of sickness throughout the kingdom, except of those cases which come within the cognizance of public officers?—It would be difficult. I think that probably private practitioners would consent to supply the information to some public officer whom they could trust. Much of the sickness, of course, is of a confidential nature and could not be generally revealed, but it is probable that medical men would supply returns to some officer appointed by the Government, and the only objection to it is the extent of the operation and the expense.

5040. Supposing you could not get such returns from private practitioners, do you think they would be useful as far as you could get them from public institutions?—Yes, it would. It should be done for all large public institutions in the country.

5041. You mean by public institutions, hospitals, dispensaries, poor law offices, medical officers of friendly societies, and medical attendants on works?—Yes; mines and manufactories, and many large concerns employ medical officers to attend their men, and as those medical officers generally give in sickness returns, they would no doubt be quite willing to supply the information for public purposes.

5042. As to the mechanism of those returns, what remark have you to make to the Commission?—The mechanism would be very similar to that now employed for returning causes of death; the primary agents would be the medical men throughout the country, and supposing the existence of a registration medical officer, the practitioners in his district would supply him periodically with returns of sickness, to be by him sent in to the central office for classification and publication. If registration medical officers be not appointed, then, I apprehend, the returns should be sent either by the practitioners direct to the central office, or mediately through the local registrars. Under any circumstances the returns must be classified and digested to make them of any value to the public, and this might be most economically and satisfactorily done by the department which now classifies and publishes the causes of death.

5043. What are your reasons for appointing a registration medical officer?—He would contribute to render the system of registration complete and perfect. The present system is, as Dr. Rumsey pointed out, though perhaps not to the extent which he asserted, imperfect; it admits of great improvement, and the chief improvement which I look to would be from this system of medical certificates in every case of death, either from the medical attendant or from the registration medical officer. In France nobody can be buried without some official certificate, and in Prussia it is the same; and for police purposes that is absolutely necessary in this country. Of course, if the body has been dealt with improperly the people can go and can say there has been no medical attendant or no medical certificate, and that affords them a ready mode of getting the body interred, and thus of defeating the ends of justice. It is also indispensable in order to render the documents relating to the cause of death useful for scientific purposes. Instances have occurred under my notice where those documents are imperfect. I think that the registration medical officer by revising them, and by carefully examining the returns with the medical men, or himself making a personal inquiry where there had been no medical attendant, would render those documents such as could be used for scientific purposes with confidence.

5044. Should the subjects of registration be extended to disease?—They should. He would supplement the duties of the coroner, and inquire into the causes of deaths, and this would bring him into contact with the causes of disease. He would thus gain a full knowledge of the health of the district which would guide him in its sanitary administration.

5045. Do you wish further to define his duties?—The duties would be in the first place to learn the number and conditions of the population by a good census. He would thus learn the number, the, sex, the age, the occupation, the wealth, the poverty, the temperance, the dwellings, and other circumstances of the population. At present the census is taken every 10 years. That perhaps is as often as it is absolutely necessary for the whole country, with all the elaboration of the inquiry, but in many towns the population increases so irregularly and so rapidly that a more frequent census is necessary. The mortality varies very greatly in different parts of great towns and in the country, and it is impossible to know what the population of those parts is, unless you have a more frequent enumeration than you get from the official decennial census. My notion is that there ought to be a population book in which the names of every person in the country should be posted up, and that should be compared with the marriage, birth, and death registers; in that way the information about the population would be complete; but in the absence of a population register, it would be absolutely necessary in large towns that you should have at least a quinquennial census. There is a quinquennial census in France, where the population does not increase so fast or so irregularly as it does in this country. He would then learn the causes of death, the causes of ill health, and the causes in any way injuriously affecting the people. He would make himself well acquainted with the means employed for the treatment of contagious and other diseases, and for the prevention of injuries to workpeople and others in mines and manufactories; and he would keep himself well informed by weekly returns of the prevailing diseases, of the meteorology, of the state of the waters, of the state of the sewers, of the consumption of food and its quality, and of the state of wages and employment, and pauperism. He would supervise generally the registration of the causes of death, and correct errors, and be empowered to ask for explanations from the medical attendants; or where there had been no skilled attendants he would conduct an independent inquiry, either himself or through the poor law medical attendant. He would also exercise generally a supervision over the sickness returns and analyse them in weekly, quarterly, and annual reports. With these returns he would compare the deaths, and he would keep the local and the central authorities accurately informed as to the health of the district. In times of epidemic he should be armed with ample administrative powers to visit the sick, and to take

the proper measures for combating disease. In all seasons the general measures for combating zymotic and prevalent diseases should be under his control, and he should be responsible to the town council in the borough with whom he would act in concert: he would be subject to dismissal only by the Secretary of State (that is necessary to secure his independence), and at the instance of two-thirds of the town council, or the corresponding local authority. His salary should be such as would command the services of the most eminent physician in large towns, inasmuch as the health of all is of more importance than the health of one. To prevent disease is easier than to bring the dead to life or to restore the sick man to health. The present salaries are generally small, so as not to command the services of the best men. It is clear, however, that some health officers, in London for instance, have been very eminent men although the salaries are quite inconsiderable, and bear no comparison with the incomes of physicians or surgeons in any considerable practice or even in moderate practice. At the same time it is necessary to state that the London health officers are in private practice. I think that the union of private practice with this public duty must be permitted in country places, as it is impossible to get the money to pay men entirely for their services in the poorer districts; but in towns I quite agree with those who think that the health officer should devote himself entirely to the duties of his office. That is done now in Liverpool by Dr. Trench, and it is done in Manchester by Mr. Leigh, as well as in some other towns; but generally a private practice is joined with this public duty, the importance of the public duty not being sufficiently apprehended at present. The salary should be sufficient also to place the health officer above the temptation to which he is exposed; certainly in some cases the health officer, where he has to analyse food, or to analyse water, or to analyse gas, is exposed to temptations. A powerful company, such as the water companies in London, can employ the health officer, and of course they can pay him much better than he is paid now under the present system, and that appears to me to open the way to very considerable abuse. Where an officer has to test an article of consumption and can be privately employed by the seller of that article, he is scarcely in a position to give an independent opinion. On that ground then I think that the salary of the health officer should be sufficient to command the services of a man of high character and of good position. The General Medical Council I am aware has now under discussion a proposal for a special examination in public medicine. I am not aware what state the question is in, but I think it would be of very great importance to get a special examination upon that subject. It should be taken into account and it should be one of the qualifications to be fixed by the Secretary of State in the case of the higher order of health officers. At least the possession of it should be made indispensable in the health officers of the great towns of the country. At present hygiène has not been taught in England to any extent in our medical schools, because there has been no scope at all for men who have acquired a superior hygienic knowledge. They were certain to get nothing for it, and very few therefore engaged in pursuits of that character.

5046. Have you any observation to make on the territorial divisions of the country for sanitary purposes?—I will give in a return of the number of municipal boroughs which was referred to in my evidence the other day. (*See Q.* 4440, p. 244, *and Appendix*, p. xix.)

5047. Have you any remark to make as to the organization of the central office?—I quite agree with those witnesses who think that the sanitary administration should be connected under one Minister. Several cases have occurred under my own notice of inconvenience from the division of authority at the centre. The sanitary duties are so various that they must necessarily be divided and subdivided into departments, at the head of which there should be one responsible officer. I would classify them in this manner: the administrative officer would have charge of the general government and the correspondence with the local boards; he would have to deal with questions affecting rating powers, borrowing powers, purchasing powers, inspecting, and advising as to legislation and byelaws; he would also have the power of inspection. I propose that there should be another department having, as at present, at its head a medical officer who might be called Physician-General or Surgeon-General, following the analogy of the army and navy; he would discharge the executive duties and have inspectors under him. I would also propose that the matter should not be entirely left to him or to the Minister, but that the Minister should have an opportunity of consulting a body which I will call the Council of Health. Sir Benjamin Hall appointed such a council in 1854. He addressed a report to Lord Palmerston, the then Home Secretary, and at his instance a medical council was appointed.

5048. Was Sir Benjamin Hall the president of the Board of Health at that time?—Yes, in 1854 he was. He followed Lord Shaftesbury, and preceded the present régime. In a letter to his medical council the following paragraph occurs: "Upon scientific matters connected with the sanitary administration of the country, where the medical profession are to be consulted, advised with, laid under contribution for service or information, or called upon to act, I wish to have the aid of a medical council to whom I may submit questions for consideration, and whom I may ask to suggest or undertake such inquiries as may from time to time be necessary." That was in 1854 when the cholera was prevalent. By this institution the president of the board took the justest steps to induce the heads of the medical profession and men of science to devote that attention to the study of the public health which its paramount importance demands. That medical council was appointed, and consisted of these persons: Dr. Paris, then president of the College of Physicians; Sir James Clark, physician to the Queen; Dr. Alderson, Dr. Arnott, Dr. Babington, Dr. Tweedie, Dr. Baly, Mr. Lawrence, vice-president of the College of Surgeons; Mr. Simon, Mr. Richard Owen, Mr. Ward, master of the Society of Apothecaries; Mr. Bacot, who was in the Apothecaries Company, and myself. The members were paid fees as boards of directors would be paid. And I would propose that the council should be consulted only, as occasion might require, by the Minister. The council of 1854 did not conduct any inquiries themselves; they appointed Dr. Robert Dundas Thompson and Mr. Glaisher to conduct inquiries into chemical questions and meteorology, connected with the spread of the cholera. Dr. Hassall applied the microscope, and there was a pathological inquiry into the mortality of cholera under different systems of treatment. All that was done under the authority of the Medical Council. I think that such an organization ought not to have been superseded. I should be very glad to see it called back again into existence. The expense to the country would be inconsiderable, and I think that it would give great weight to the recommendations of the Minister, and it would give him greater confidence in his measures. I should not trust this council with any administrative or executive duties, or with the final decision upon any question. They should be called in as a consultative and deliberative body. It would also have this very good collateral effect; it would attract the attention of all the higher class of men practising medicine to questions of public health.

5049. Do you desire the revival of the old board of health?—No, I do not, in its old form. I prefer a minister, a single head, to conduct the sanitary administration of the country.

5050. In your recommendation that there should be a central office, do I understand you to propose that the department which is now the Privy Council, super-

intended by Mr. Simon, and the Local Government Office, superintended by Mr. Tom Taylor, should be put together?—They should be all under a Minister; I would add also an engineering department.

5051. Under what department is your office?—The Registrar-General is the head of it, and has the whole control of the office, but he reports to the Home Secretary.

5052. Then the Home Secretary is his head?—Yes, as the Registrar-General is not in Parliament, of course he reports to the Home Secretary.

5053. Have you any suggestions to make as to local officers?—Yes, that is a very important question, for the administration of the Health Acts is now in a most unsatisfactory state, owing to the confusion of the divisions and the confusion of authority. You will observe in the return which I have put in, that there are 781 towns in the country, and that of those towns only 208 are governed under the Municipal Act. The population of those 781 towns at the census of 1861 was 10,960,998, and the population of the 208 boroughs is 5,432,637. If the Municipal Corporation Act is good for anything, and is a good system of local government, it appears to me that it ought to be extended to all the principal towns of the kingdom. Then, in the case of municipal authorities, the mayor, aldermen, and councillors would be the proper authorities to administer the Sanitary Acts, and to be armed with all power.

5054. Do you mean towns of a certain size?—Yes, all towns of a certain size. A large number of those municipal boroughs have populations ranging from 2,000 to 5,000 and 10,000. And many towns in the country without municipal organization have populations ranging from 10,000 to 30,000 and 50,000. (*See Appendix*, p. xix.) Some of them have had corporations since this return was made, but here are many towns before me with those large populations which are governed under local government Acts, and which are governed in a great variety of ways, but which I hold would be better governed under the Municipal Corporation Act. In police matters some of the small boroughs have their own police, and in that way they are troublesome, as they interfere with the police system of the country; and I can conceive that many of those boroughs might very well be extinguished and thrown into the county: certainly, some of the very small ones might, and of course it would be undesirable to call any other small boroughs into existence; but all the large towns in the kingdom I hold should be governed under the Municipal Act: and I am quite sure that it would work much better for sanitary purposes than the present system. Elsewhere, out of the large towns, you must resort to some other organization. You now resort to the parish, to the vestry, or to the board of guardians. On the whole I am very much disposed to think that the poor law union or registration district would be the best unit, or territorial division, to deal with all except the towns. The registration districts are of convenient size for administrative purposes; they are able to employ officers and clerks, and they are able to employ any officer that would be required for sanitary matters. There are two other large divisions of the county which are recognized, namely, there is the lieutenancy division for militia purposes, and there are sessional divisions. Those are divisions of the county, and they might be put up in competition with the poor law union, or with the registration district; you might take the one or the other. Then there are the highway districts. It appears to me that really the administration of the poor law is one of the lowest duties; the boards of guardians require reorganization on a well considered plan, and they should be absorbed in local government boards and town councils.

5055. (*Lieut.-Col. Ewart.*) At present the certificate of death which is given by the medical attendant is given to the family of the deceased, is it not?—It is given to one of the family. If a death occurs in a family, the usual course is this: the undertaker or some one says, "You must get a certificate of the cause of the death," and some person present at the death or in attendance at the last illness then goes to the registrar and reports the death, and gets a certificate of the registry of the death, and that is brought back to the family and of course is seen by them.

5056. Would it not be preferable if the certificate passed between the medical attendant and the registrar as a confidential paper?—In some cases it might.

5057. As a general rule, would it not be likely to lead to more careful registration and more accurate registration?—I think not. I see no reason why families should have the cause of death concealed from them; besides, when it appears once in the register any person can go and get a copy of it; it is quite open to the public.

5058. But do you think it is desirable that it should be?—It is part of the law, and it is absolutely necessary.

5059. Where there are several causes of death may it not lead to the most prominent cause not being assigned?—It is a question of very great delicacy. Of course it is impossible to force people to reveal certain diseases, and medical men act with great discretion in those matters. They return, I believe, generally in the great majority of cases the true cause of death; but in such cases for instance as syphilis, it is almost impossible to get them to return the real cause of death, which is originally syphilis; they would perhaps return a secondary cause. It would be very difficult to get over that objection. I think we are bound to do the best thing we can, but those cases really are not numerous where concealment is desired.

5060. Might it not pass from the medical attendant to the registrar as a confidential document, and then the simple licence to bury would be a certificate, but it would not show the cause of death?—You might give that option to a medical man. I think that he might very well have the option of sending it direct to the registrar. He would act of course with discretion, and would know what would be advisable under the circumstances.

5061. If a general system of registration with a medical certificate were established as you have suggested, you would propose that the registrar should move the coroner in doubtful cases, would you not?—Yes.

5062. He would give him information?—I think he should give him information, and the registration medical officer would do the same. I do not propose to abolish the office of coroner. I think the office is very important, as bringing public opinion to bear upon the suppression of crime. The registration medical officer if he saw anything requiring a public inquiry would give notice to the coroner. That reminds me of the case of Pritchard, which Dr. Christison will recollect. A medical man is sometimes placed in a very painful position; he may have suspicions of crime, but he could not venture to hint them directly to the party likely to be incriminated, and in such cases I think that the medical man under the plan I propose would say, "I do not feel myself justified in giving a certificate "of the cause of this death, you must call on the regis- "tration medical officer;" that registration medical officer would then get from him all the information he required, and such cases as that of Pritchard could scarcely go on.

5063. (*Mr. Whitbread.*) You stated to the Commission in the evidence which you gave on a former occasion in answer to question No. 4460 that you had no doubt that there are a few deaths which are unregistered, but not many; what ground have you for coming to the conclusion that they are but few?—We have frequently made inquiries about the deaths that are unregistered, and very few indeed have come under our observation; and I am quite sure that if they were very numerous, except in the cases of still-born children, they would not escape detection. I see no reason at all to suppose that they would escape detection; they would be dis-

covered in some way or other. In the country they cannot occur without detection.

5064. How do you know that the clergyman invariably informs the Registrar-General when he conducts a funeral without a certificate?—He is subject to a penalty of 10*l.* unless he gives notice to the district registrar within seven days.

5065. Have you ever known that Act put in force against a clergyman?—Not to my knowledge; the clergy very generally furnish the information, but I consider the burial without certificate loose, and in many ways exceedingly objectionable: and for that reason I have urged that nobody should be interred under any circumstances without a certificate. It would give rise to inconvenience and some painful scenes perhaps occasionally, but I think that inconvenience must be incurred for the sake of the public benefit.

5066. In what number of cases does the Registrar-General hear of the death through the clergyman conducting the funeral?—I do not know; he hears of none directly. All those returns are made to the registrar, but the system is very difficult to work, inasmuch as the clergyman sometimes does not know where the registrar lives, and is unable to send the certificate directly to the proper registrar. In every way it works badly; it has been done, however, with a view to public convenience, and not to put families in distress to any unnecessary pain.

5067. But could you state more fully your grounds for your belief that there are but few of those cases?—I merely express that as my opinion from a consideration of the whole facts of the case, but I do not wish the Commission to take it as the result of any special inquiry on my part. Such an inquiry might be made with advantage.

5068. You know of no case in which the Act has been put in force against a clergyman, and you have no means of telling us what proportion of those deaths are thus certified to the registrar through the clergyman?—I have not; but a return could be procured from the cemeteries and from the registrars, if the Commission desired it.

5069. Then the only motive power, where the family have not provided the clergyman with the proper certificate, is the 10*l.* penalty against the clergyman for conducting the funeral without a certificate?—Only the honour of the clergyman, who has a public duty to perform, and the threat of the 10*l.* penalty.

5070. Is it the duty of anybody, the police or any other authority, to inquire whether there has been a funeral conducted without a certificate?—Nobody's duty, except in the case of suspected crime.

5071. You think that nobody should be interred without a certificate; have you considered of whom that certificate should be demanded; should it be the duty of the clergyman to refuse burial without the certificate?—Yes, it should be his duty; all public cemeteries should have notice that no funeral could be celebrated without a certificate.

5072. That would lead to great inconvenience in some cases, would it not?—In some cases it would, but those inconveniences are overcome in France for instance, where they bury immediately, with scarcely any delay; and they could be overcome in this country.

5073. Do you know what proportion of funerals are conducted upon any particular day in large towns like London or Manchester?—I do not remember, but I think Mr. Chadwick got some information upon that subject.

5074. I presume you know that there are one or two days in the week on which funerals are conducted amongst certain classes of the people?—Yes, but I have no specific information upon that subject.

5075. Would not it be very inconvenient to have the burial refused on that day, almost the only day perhaps on which the parents could afford to be absent from their work?—It would sometimes be inconvenient.

5076. Could not you demand of the persons who undertook the funeral, the undertaker, that he should see the certificate of death before he conducted the funeral?—That would be part of my plan, that the undertaker or some person charged with conducting the funeral should procure the certificate.

5077. And also that he should be under a severe penalty if he conducted a funeral without a certificate?—That would be one means, no doubt, of enforcing the operation of the Act.

5078. Would not that very likely obviate the extreme inconvenience of parents coming a long distance with children to bury, and then being refused burial at the cemetery?—Where there was an undertaker, no doubt that would be the case. I do not think undertakers are always employed. All undertakers should be registered officers, and there should be some person charged with the conduct of funerals in every one of those districts where the parties were unable to provide an undertaker themselves.

5079. Do you consider that the penalty of 10*l.* with the entire absence of anybody whose duty it is to see that that penalty is enforced, is a sufficient guarantee for there being no funeral without a certificate?—I do not. I consider it unsatisfactory.

5080. What would you substitute for it?—I propose that no funeral should be performed without the authorization of a public certificate.

5081. What is the motive power to prevent a funeral being performed without a certificate?—That they should not be authorized to enter the churchyard, and should not be authorized to enter the cemetery. That is the only power of enforcing the Act that I know of.

5082. Who is to see the Act put in force?—It would be part of the police of the country to see that the Act was carried out.

5083. You have now come to the policeman—is he to step in?—If required. If the law is about to be violated you prevent violation of the law by calling in the constituted authorities.

5084. You also think that the Registration Medical Officer should see the body if the person dying has not been seen by a private medical practitioner within a very short time of death?—I do think for the purposes of police, that is absolutely necessary, and also to give authority to the certificate of death.

5085. And that the certificate itself should bear upon the face of it the number of hours previous to the death at which the medical officer paid his last visit?—Certainly, that is suggested in the certificate as at present existing, and as at present distributed by the Registrar-General.

5086. (*Dr. Christison.*) You expressed your opinion that for at all events the higher officers, under a system of complete sanitary inspection, it would be desirable to have a special examination; and I would more especially point out this to you, that I believe in the university of London a degree of Doctor of Science is established which branches in different directions, and that the same has been done in Edinburgh, where the degree of doctor of science is given upon a very high examination only, to those who have either got a degree in arts or a degree in medicine, and they usually receive the degree of doctor of science in one of four departments, philosophy, philology, and physics, and by a statute of our universities it is easy to add a fourth in State medicine. I would ask you whether a similar system of examination is not practicable in the universities of England generally, and whether it may not be adopted also by the colleges, and whether in that way the officers that you point at might not be easily got in a sufficient number and well qualified for the important purposes which you suggest?—I see no reason why if the universities are intrusted with the other examinations they should not be intrusted with this examination in State medicine. I take it for granted that the universities would make hygiène or State medicine a part of their curriculum. No doubt in that case they would have professors quite competent to conduct such an examination, and at Edinburgh and the larger universities

at any rate, of the country, such an examination would be conducted in the best possible manner.

5087. You have been already asked as to the advantage of a registry of sickness, but there is one particular advantage which I saw you pointed out as to which I am not sure that the Commission fully understand its importance, namely, that for discovering the causes of disease where they are for example connected with atmospheric conditions, it is of far greater consequence to know the date of the sickness than the date of death, the latter being at present that by which alone you can discover from your register the apparent cause. It is of far greater consequence in order to trace out accurately the cause, is it not, that you should have the date of the sickness rather than the date of the death?—Yes, undoubtedly it is of very great importance, at the same time it is sometimes difficult; the registration of sickness is attended with considerably more difficulty than the registration of the causes of death, inasmuch as at a very early stage of disease it is sometimes impossible to say what the disease is.

5088. Do not you think, without going to the great minuteness of information which you have very properly pointed out might be desirable, that enough of information would be obtained if you got returns from hospitals, and from dispensaries, and from the poor law unions, because you would get there of course very extensive returns as to the possible extent of disease when it becomes prevalent?—That would be valuable information certainly, and be of great practical use.

5089. That information, I apprehend, would be had without much difficulty?—It could. The medical officers of the poor law make extensive returns now, or ought to do so under the regulations, and of those returns no use is made as far as I know, or very little use.

5090. There is more immediate connexion between the origin of illness and the cause than there is between the death and the cause, particularly where it is atmospheric?—Yes.

5091. That would lead much sooner, would it not, to means being taken for the arrestment of epidemics as they begin to extend widely?—It is quite necessary, as in cholera, for instance, not to wait till the disease is near its termination; you take it in a very early stage and treat it, and then treat it successfully. In fact, it was found in the cholera epidemic necessary to establish a system of house-to-house visitation which had the special object of discovering cases of illness and not causes of death.

5092. (*Dr. Acland.*) Dr. Rumsey stated in evidence, and I believe you were present, that the death-rates as at present recorded are not always to be depended upon, do you agree that this is the case?—The usual way of calculating the death-rate is to take the population and compare the population with the deaths and then to state the rate of mortality at so many per thousand, and for practical purposes you get the mortality in that way with sufficient accuracy to guide you. If you want greater exactness there are scientific methods of getting that exactness.

5093. Could you state to the Commission what are the principal grounds of the fallacy and the extent to which the fallacy could probably go under any circumstances?—There might be errors in the census, and Dr. Rumsey referred to some errors in the census, but I do not think that those errors are considerable. He mentioned Bradford as an instance, I think, where it was stated that there had been an error of 24,000: that was not in the census, but in the estimate made by the people of Bradford, who wanted to show that the mortality in that town was not so great as it had been represented to be by the Registrar-General, but at the census they discovered that their estimate was erroneous. Also in Liverpool in the same manner, they were dissatisfied at seeing their town represented as suffering from a high rate of mortality, and some contended that there was an error in the census and they thought that they discovered one, but on further investigation they found that there was no such error. We see no reason for supposing that there are any errors in the census likely to affect ordinary calculations. Of errors in the returns of death I have heard, but I do not myself conceive that they are sufficiently extensive to affect the general results. The only fallacy arises from the population consisting of various component parts experiencing very different rates of mortality. For instance, the mortality is very high in the first five years of age, but from five to 10, and 10 to 15, it is very low, and then as age advances the rate of mortality increases.

5094. But the registration returns of England and Wales are so carefully conducted that any precise statistician, who alone ought to be heard on this subject, can practically eliminate any errors from that source by examining the tables of ages?—Yes, certainly, the tables are calculated so as to show the mortality at the different ages.

5095. So that there is hardly any source of statistical fallacy to a careful statistician?—None at all.

5096. And no other is worthy of attention?—No. It has this effect, that sometimes the mortality of a town is represented much lower than it really is found to be after the examination has been conducted scientifically. Wherever the population is increasing, the amount of mortality is underrated, in consequence of there being an excess of young people between the age of 5 and (say) 45, in those numbers which make the mortality appear lower than it really is. If we have soldiers, where the mortality is only 1 in 100, mixed up with the general population, as we have at Shorncliff, for instance, the mortality of the soldiers being one, and the mortality of the general population two, the effect of that disturbance makes the mortality appear much lower than it really is. So it is in London; the mortality of London appears much lower than it really is. The mortality in London is reduced in two ways: it is reduced by your having a large immigration of persons at the period of age when the mortality is low; and it is reduced further by the return of certain patients to the country to die, of consumption, for instance. In Birmingham it is the same. By an examination of the mortality of children you will easily see that the causes of disease in London are excessively active. The mortality of male children under five years of age, for instance, is about 8 per cent., while in some of the more healthy districts it is not more than 4 per cent.; and the same with Birmingham. And as you have properly observed, where the question is investigated by a competent person, there is no difficulty in getting out very accurately the rate of mortality in a town, and making allowance for all those disturbing elements, just as you do in astronomy or the exact sciences.

5097. I think we ought to introduce this reservation which is a very obvious one, that of course it depends upon the accuracy of the medical certificate?—It does.

5098. Is there not, however, one other cause of fallacy, the extent of which it is very desirable we should know, although it bears upon an entirely different branch of the subject, namely, that the registration districts do not really in all cases state the actual massing of the population in a given district. Take for instance, Oxford—a great part of the population of Oxford, about 20,000, is put down in your registration returns as in one district, namely, Oxford, but that is only two-thirds of the town; the remainder of the population comes under the head of the suburban district of Headington, which is a little village, and that is stated to have a population of about 10,000—really those two registration districts are virtually one, and it may so happen that the mortality and the death-rate in both is the same, or it may happen that it is entirely different—do I represent correctly the difficulty which arises in many registration districts, or is this a rare exception?—It arises in many registration districts, and gives rise to great inconvenience. The Registrar General has been frequently asked to show whether

in towns or localities where the Public Health and Local Government Acts have been introduced the mortality has been reduced or not, and it has been found almost impossible to determine that question, which of course is a thing that ought to be got at immediately. The difficulty has arisen through those sanitary Acts going apparently in quite a wild way about the country, cutting the country into little sections; taking parts of parishes and parts of districts, and grouping them together in the most arbitrary manner. Supposing the town council of Oxford or the authorities of Oxford wanted to know the mortality of the borough over which they have jurisdiction, it is not represented in the Registrar-General's return in consequence of the bad and disorderly territorial division. Every board makes a fresh division of the country. I would recommend therefore a general revision of those districts, and in the case of Oxford I should put the whole of Oxford together, and register the deaths in the borough; then there would be no difficulty whatever in showing the sanitary progress of Oxford.

5099. This case of Oxford happens to illustrate another curious point upon which you can perhaps give the Commission information, and that is, what is the power of revising union districts? or is there no such power? Until lately a considerable portion of the pauper population walked past one workhouse three miles further to their own workhouse, is there no controlling authority either on the part of the Secretary of State or the Poor Law Board to compel the cessation of an inconvenience of that kind? —Now the Poor Law Board has the power; formerly there were local Acts with which the Poor Law Board could not interfere, but by a recent Act of Parliament all those local districts have been brought under the control of the Poor Law Commissioners and the Poor Law Board is now revising nearly all such districts.

5100. Supposing such an improvement to take place in the redistribution of the poor law districts, should you at once change the registration districts?—That follows as a matter of course. Under the Registration Act the Poor Law Union is made the registration district.

5101. There was another point on which Dr. Rumsey laid great stress, and it is desirable that we should know from you your opinion on the subject, and it was this: he pointed out certain inconveniences which arose from not following each particular life from its birth to its death; theoretically, no doubt, it is easy to suggest this following lives, but what is your opinion as to the feasibility of it?—Practically, I am afraid it would be impossible; without a well-kept population register there would be no means of carrying it out; but by scientific methods we are able to get nearly the same result by a comparison of the mortality at different ages, as if we could follow the life from birth to its termination. In fact, a Life Table is intended to show out of a million children born, how many survive each year of age.

5102. Practically from your great experience as a statistician in vital statistics do you believe that that circumstance materially invalidates your returns?—I do not think it does; it is taken into account in the case of towns in the way I have mentioned. Thus, in arguing about the mortality of London, you find the mortality at a given period of life lower than it should be, according to the mortality prevailing at other periods, and you take that into account in any judgment that you form as to the sanitary condition of that town: that is all you can do in the present state of our information. At present no system of registration is organized to follow a man from his birth to his grave invariably all over the country and all over the world.

5103. Are you satisfied as to the classification of the causes of death by the new nomenclature?—I think the nomenclature itself is very good, and has been very well considered, and might be very well adopted. The classification also is a very useful one. I do not say that the classification is the only one which should be adopted, but it is a very useful one for many purposes.

5104. It answers most statistical purposes, does it not?—Yes, certainly.

5105. When you mentioned the central authority just now, you did not, I think, state fully what offices you would wish to be combined under one minister of health: should you include the business of the Local Government Office and the present Privy Council department so far as it concerns health and your own office, the Registration Office?—The Registrar-General, I apprehend, would continue his function as at present of registering the marriages, births, and deaths and amongst other things the causes of death; he would act in concert, and would naturally be disposed to render every possible assistance, to other departments.

5106. How about the Poor Law Board?—The Poor Law Board in the same manner I contend should have a medical department specially charged with the supervision of the relief of the poor, and perhaps the medical officer of that board would form part of the council which I have ventured to submit to the Commission.

5107. Would it not be a good plan that each of these should be as they practically are now separate Government departments, but that each should send a representative to a council of public health who should organize among themselves what each department should take; would not that simplify their labours very much?—It would be a very great advantage to the Minister I imagine, he being entirely responsible for every executive act.

5108. I should like to have your view in the same way with regard to the constitution of the local authorities; you said that you were quite satisfied that large towns above a certain population, some 700 towns in England, had better all have a board on the model of the municipal authority, and to that body you would assign all those sanitary functions?—Yes, I should, in those of the 781 towns having a population of some extent.

5109. That is to say, they would be responsible for the registration and for the administration of the poor law medical department to a certain extent?—Yes, as treating the sick, or feeding the destitute, I conceive is properly a part of sanitary administration. And all their other functions are the proper functions of a local government.

5110. And of course registration duties, and what we call now the administration of the nuisance law, as well?—Yes, and highways also. I may mention that, for I am a member of a local board, and I know a little about the organization of those bodies.

5111. Do you think that in the same way all those functions may be committed in all other districts to the guardians?—To those that we now call guardians.

5112. They being elected for the purpose of complete sanitary administration?—Yes, for the purpose of local government.

5113. Then the health officer either in those municipal corporations or in those, I will not call them poor law districts, but guardians districts, would be responsible for the execution of all sanitary functions also?—He would.

5114. You could hardly expect that every general practitioner, however competent to the ordinary charge of sick persons, should also be a highly skilled adviser on great public health or State medicine questions. You do not mean, I presume, that every such person should be sound advisers upon all questions of the nature of forensic medicine or great public health questions. You would have some consulting chief officer, would you not?—For special duties, certainly; I have great confidence, I need not say in the manner in which the medical men of the country carry on their special business, but inasmuch as they have never been employed in offices involving a knowledge of State medicine, or very rarely, of course, I do not think that, as at present organized and educated, they are competent to discharge those duties in so efficient a manner

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as this country has a right to expect them to be discharged.

5115. It has been frequently suggested that the way to meet that would be to have a number of inspectors. Dr. Rumsey in his work on State medicine puts that number at from 200 to 300 inspectors for England and Wales; he said that that was written 15 years ago, and that probably now he should think that a smaller number would be sufficient; those persons he suggested would then be debarred from private practice, and have salaries upon which as persons of eminence in their profession they would be able to live; for instance, about 1*l.* to every hundred of the population. Do you think that we might have quite sufficient advice and inspection in this country, considering the conveniences of railroads and the smallness of our territory, without an elaborate and costly organization of that kind?—I think that the present system of inspection is exceedingly useful with Mr. Simon at its head, and with an inspector to go down and visit the country and report where such reports are required; you chiefly want to stimulate the local authorities of certain districts.

5116. But the Privy Council health officer acts intermittently and depends entirely upon information which he may receive as best he can. I understand you yourself to wish that there should be constant sanitary inspection?—I am proposing that you should have such an officer in every large town in the kingdom, and, where you have not such an officer in a large town, you should have him in every one of those which we will call unions or districts.

5117. Would not it be very possible to have as you suggested just now the principal physician or surgeon of some district, give him a moderate retaining fee, and then require him to do certain work for a certain salary, for instance analyses, without necessarily occupying the whole of his time?—I think that would be very desirable where a special chemical analysis requires special competency.

5118. Then poor law medical officers appointed originally for the curative care of the population would act under a sanitary chief?—Yes.

5119. (*Dr. Stokes.*) What do you exactly mean by the term medical registration officer? Do you mean that he must be a qualified medical man?—Yes; in the first instance he must be a qualified medical man.

5120. Do you think it impossible that a man could discharge those duties who was not a medical man, supposing he had received such an education as Dr. Christison has spoken of as necessary for a Doctor of Science?—I think he could not discharge those duties of investigation of the causes of death, seeing that is a most difficult thing.

5121. Who would you suppose should have the appointment of such officer?—I think you must necessarily give the appointment to those boards who pay the officer; in this country that is indispensable, but the officer's duty and qualifications should be defined by the Secretary of State, as I have mentioned, under the advice of the Council of Health; he should possess those indispensable qualifications just as he should possess the qualifications you now require before you allow a man to practice.

5122. Would you limit his operations by the area or by the population?—I am proposing that the country should be divided territorially, having regard to population and to area, and those registration districts which we have been referring to in England are so divided.

5123. Would you debar him from private practice?—In large cities where you could pay him adequately I would, but in country districts it would at present be I think impossible to pay adequately an officer so qualified; by the force of things you would be bound to take a man who could only devote a portion of his time to those duties.

5124. Taking large cities, would you debar him from hospital practice or dispensary practice?—I do not see that it would be necessary to debar him from hospital practice; in fact I think that it would be an advantage perhaps that he should be allowed to practise in hospitals if he could find time for it, which I doubt very much.

5125. Would you give him power to enter and inspect private dwellings?—Yes. I would charge him with all the duties of a health officer, and arm him with all the power necessary for discharging those duties.

5126. Is it your opinion that bad smells and bad drains, and bad ventilation, are in themselves the causes of zymotic disease, or do they act by predisposing the population to sickness from other causes?—I am not aware that we have any positive evidence that those matters which propagate disease have any particular smell. Small-pox has a particular smell, but small-pox lymph and vaccine lymph have not any smell at all.

5127. But do you consider that certain conditions to which sanitary measures are opposed are of themselves the cause of zymotic disease?—I think that we can say that under those conditions zymotic diseases are always much more fatal than they are in pure air, and under other and more favourable sanitary conditions.

5128. You do not think that they produce all forms of epidemics?—I do not think they do.

5129. So that we may have an epidemic without those causes?—Yes, I think so. I should say, so far as the evidence goes, that they do not produce many of those epidemics.

5130. Do they produce many separate or different forms of fever?—I think they do; for instance, gaol fever and typhoid fever appear to have different origins.

5131. The late Dr. Graves, of Dublin, proposed that the Government should establish observatories in different parts of the country, those observatories to be furnished with all necessary scientific instruments in the highest degree of perfection, and to be officered by the most scientific men both in physics and in medicine, for the purpose of observing all meteorological phenomena in connexion with all phenomena of zymotic disease. Might I ask you what is your opinion of that proposition?—I think that we shall have, under the plan proposed by Mr. Glaisher and by the Royal Society, a complete system of meteorological observation in the country.

5132. But in connexion with medical observation?—It might admit readily of comparison with the system of medical observation carried on by those officers that we have been speaking of. You might have meteorology on one hand and you might have the registration of the causes of sickness on the other hand, and you would naturally compare them.

5133. Is not the determination of the cause of death one of the most difficult of medical problems?—It is frequently an insoluble problem, but still the problem admits of solution in so many cases, that even the solutions which we are able to get in the present state of medical science are invaluable.

5134. In practice are there not a great number of cases where the medical man cannot honestly fill up the certificate?—Yes, many such cases occur.

5135. In consulting practice it is so, is it not?—Yes.

5136. And in hospital practice?—Yes. In that case I propose that the consulting practitioner should not give a certificate of the cause of death, but that the body should be visited by the registration medical officer, who would get from the consulting physician all the information that he could gather as well as from other sources.

5137. Do you think that the qualification of a coroner should be such a qualification as the highest degree in State medicine, should such a degree be established?—It should be so, in my opinion.

5138. Or would you be satisfied with having such an assessor with the highest degree in State medicine sitting with him?—I can conceive of a legal coroner carrying on the business in conjunction with a medical assessor of that kind, but for the sake of simplicity, as the chief object is not judicial but to ascertain the

cause of death, I think that the court would be much more usefully presided over by a man possessing those qualifications as to State medicine.

5139. Then do you consider it necessary that before a man should take the office of coroner he should have the highest degree in State medicine that he can obtain ?—I think so.

5140. (*Sir T. Watson.*) You have just stated that great difficulty sometimes exists in ascertaining the cause of death ; is it not infinitely more important to ascertain the causes of disease in a community than the cause of death ?—I think both are of great importance, and from different points of view.

5141. To ascertain the causes of disease it would be necessary, would it not, to have what you have already recommended, a registration of diseases as well as a registration of deaths ?—Yes, certainly.

5142. Does the existence in a community of a widely spread epidemic disease influence proportionally to its prevalence the total mortality of the community at that time ?—In some cases it does ; in others it does not.

5143. Has it not been thought, or found perhaps by observation, that any favourable rate of mortality arising from the exemption from a given epidemic disease is balanced by a proportional increase of mortality from other diseases ?—We have sometimes found that to be the case.

5144. So that a widely spread epidemic of disease involving a large amount of mortality is not so entirely an evil with reference to the whole mortality of the community as at first sight it might appear to be ? — That depends upon the severity of the epidemic. In certain cases of course it overwhelms the population, as in the plagues of London, and in the epidemics of cholera in some countries and in some parts of London, but in other cases as you properly observe if you take the average of four or five years the effect of epidemics is not so striking as some people suppose.

5145. When there has been an epidemic season as it is called of small pox in London, the whole amount of mortality is not proportionally swelled by it, because if it had been absent a great many more deaths would have occurred, would they not, from other zymotic diseases ? —Undoubtedly ; they replace each other apparently. That has been the case with small pox ; the mortality has been reduced from small pox, but the mortality from scarlatina and diphtheria and some other forms of zymotic disease has increased.

5146. (*Mr. Paget.*) Does the number of registered deaths give more than a very vague estimate of the number of cases of any prevalent disease, such as diarrhœa or bronchitis ?—They give only a vague idea. We know from the army returns that the cases of disease bear a certain proportion to the deaths, and so we do in friendly societies. We know that in some friendly societies there are about 40 cases of severe illness which bring men on the books of the society ; there are about 70 cases which require the attention of a medical attendant ; and there may be 30 or 40 very slight illnesses which obtain no attention under ordinary circumstances.

5147. Therefore while deaths alone are registered, have you any means of ascertaining the variations in what may be called the working power of the country so far as it depends upon the health of the working people ?—You only get at it approximately, you cannot get it directly ; you require the registration of sickness such as I have mentioned, and such as obtains now in the army.

5148. If the working power of a district were greatly diminished by any non-fatal disease, would there be any official or public knowledge of that fact ? —It might not be officially known : for instance, many parts of the country are infested by ague, and as ague rarely kills it does not come under notice, and rheumatism the same.

5149. Is there at this time any knowledge within your own possession or within your reach of how far the working power of a district is diminished by any disease ?—Not directly. I should mention that at the Irish census of 1861 a return of all persons disabled from any cause and from any disease was obtained, and I suggested that should be done in this country, but the Secretary of State did not approve of it, and we did not get, even on that day as we might, the number of persons suffering from disease and from disability.

5150. Suppose at this time there were 2,000 or 3,000 people in London disabled from their day's work by diarrhœa, should we know that ?—No, very rarely ; for if they were adults there would probably be very few deaths, at least not sufficient deaths to attract attention.

5151. Therefore the working power of the country may be greatly diminished without any one being aware of it ?—Certainly, except the medical men who are called in.

5152. And therefore without any means for removing the cause of it ?—Yes, certainly.

5153. Do you think that there could be a sufficient registration of diseases to arrest such a thing within a few days of its occurence, or at least to become aware of it ?—Yes, certainly to become aware of it, and in certain cases to arrest also the progress of disease.

5154. Over what classes of persons would that registration extend ?—To make it complete it should extend over the whole population.

5155. Do you think that that would be practicable ? —It is quite practicable if people are willing to incur the expense, it is a mere question of expense ; the Registrar General can do anything of that kind if there is the proper sum provided for it.

5156. To what extent do you think it could be fairly practicable ?—I suggest that it might be got from all public institutions, from poor law officers, and from friendly societies, and a great many sources of that kind.

5157. Would you have it extend over all diseases, or over only certain diseases to be named ?—I think all diseases, but all diseases need not be distinguished.

5158. Still, however subject to error, it would be better than the complete ignorance in which we are now ?—Infinitely better, and very well worth the expense to which it would put the community.

5159. That ignorance may be stated to be complete, and to stand in the way of any speedy means of arresting any epidemic which is not largely fatal ?—Certainly.

5160. (*Mr. Powell.*) On referring to the census of 1861 I find that there are certain discrepancies in each division between the numbers returned for the poor law unions, which, as a note states, "will not in all cases "agree with those previously given for the super- "intendent registrars' districts," and then follows this expression : "Those latter include places, some of "which were formerly and others are still described "as extra-parochial, but are not part of a union." Does that expression which I have just read to you refer to districts which are included in what I think are termed temporary districts in the Registration Act of the 6 & 7 Will. IV. ?—Mr. Lambert will be better able to speak to that than I, but all extra-parochial places are now treated as parishes for poor law purposes and for registration purposes, and they are of course dealt with just as parishes would be. They gave a great deal of trouble to us in taking the census.

5161. Could you state with any reasonable degree of accuracy, but of course not with precise accuracy, what is the total population included in those extra-parochial places ?—I could not. I do not think we attempted to get it.

5162. In other words you did not know the discrepancies, which I have just explained to you, arising from that source between the poor law returns and the superintendent registrar's returns ?—I am aware of the fact.

5163. To use an expression which has lately become common, there are "counties and counties ;" there being registration counties, and there being another class of counties ; could you explain the difference between

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those two classes of counties?—The old division, the county division, is very well known, but it was changed very considerably by incorporating the detached parts of counties in the counties by which those parts were surrounded; I have described all those changes in the introduction to the census of 1851: Worcestershire and Staffordshire were formerly mixed up together, and that was the case also in other counties, but barring that the old county boundaries were well known and well defined.

5164. The discrepancy in those two counties arises from including in the registration counties districts belonging to old counties which are geographically situated in the registration county?—Yes; the registration district as a rule is based upon the poor law union. Registration counties consist of an aggregation of poor law unions, and when those unions run into two counties, as they often do, for the county boundaries were disregarded in making those poor law unions, then of course you get parts of two counties in one poor law union, and you get the whole of that poor law union attached to one county, to the county in fact in which the greatest part of the population is situated.

5165. Then that would form a second source of discrepancy between the two classes of counties?—The classification will be now substantially the same as the poor law classification, in consequence of the abolition of the Gilbert's incorporations and other temporary districts.

5166. Then we may hope that in the census of 1871 the source of embarrassment which I have just explained will disappear?—I am not aware that this source of embarrassment will entirely disappear, because I am afraid no general measures for redistributing the area of the country can be carried out. The poor law unions ought to be revised undoubtedly with reference to that and other matters. The poor law unions were formed by the assistant commissioners, some of them very able and having regard to the old divisions of the county, others on principles which it is impossible to understand. But there they are, and it is undesirable to change them unless you have some particular object in effecting such change.

5167. Do you think that if they were to be constituted with that convenient body which you still describe as boards of guardians, invested with powers of a sanitary character, and also with powers with regard to carrying out the poor law administration, there would be any confusion arising from the fact that the same body for poor law purposes would look to the Poor Law Board as their superior, and for sanitary purposes to the Home Office as their superior authority?—No doubt there would be a difficulty in using the same authority, in using the town council for instance for sanitary, police, and other purposes.

5168. But do you consider that that difficulty would be one which might fairly be encountered?—I think so. I would propose that boards of guardians should now be constituted very much as the local board is The local board with which I am connected has committees. We have a highway committee which manages the highways, we have a health committee which takes cognizance of all the health subjects, and we have a finance committee; so I suggest that there should be a chairman of those several committees having charge of special departments of the duties devolving on that local government board.

5169. And you would probably have a poor law committee?—Yes, I would have a poor law committee. I conceive that the poor law administration should be rather a subordinate administration of such a local board.

5170. Would you place that poor law committee in direct communication with the Poor Law Board?—I should be afraid of expressing an opinion off-hand. It requires a very careful consideration to prevent the clashing of central offices.

5171. I do not at this moment clearly understand from the Act of the 6 & 7 Will. IV. who is the paymaster for the registrars. I mean from what fund they are paid?—I have here a return showing that the registrars of births and deaths get 1*s.* for each entry, and 1*s.* 6*d.* in addition in certain cases, and that is paid out of the poor rate.

The witness delivered in the following returns:—

AMOUNTS paid to the 2,202 Registrars of Births and Deaths in England and Wales for Entries registered in 1868.

	£	s.	d.
For 786,156 births, at 1*s.* each	39,307	16	0
,, 480,677 deaths, at 1*s.* each	24,033	17	0
,, 1*s.* 6*d.* additional to each registrar for the first 20 entries registered in the year	3,303	0	0
Paid out of the poor rate	66,644	13	0
Amount voted by parliament in payment of superintendent registrars, less 2*d.* per entry on 176,729 marriages	16,387	0	0
Central office, less proportion of cost of marriages - - - - - 23,000*l.* – 5,000*l.* =	18,000	0	0
	£101,031	13	0

$$\frac{£101{,}031\ 13\ 0}{1{,}266{,}833} = 1s.\ 7d.$$ for each birth or death registered.

EXPENSES of Superintendent Registrars and Registrars for the year ended 31st March 1869.

	£	s.	d.	£	s.	d.
Fees of superintendent registrars, viz., 2*d.* per entry on registered births, deaths, and marriages				12,092	5	10
Expenses of superintendent registrars:—						
Ink	52	11	3			
Advertisements	13	1	8			
Allowances for rent	545	0	0			
Postage	11	19	10			
Carriage of parcels	0	0	10			
Sundries	10	10	0			
				633	3	7
Expenses of registrars:—						
Collecting certified copies of marriages from clergy	2,704	16	0			
Travelling to the register offices	1,821	11	6			
Fees for certificates of deaths of medical men	42	0	4			
Postage	540	15	9			
Carriage of parcels	5	14	11			
Sundries	17	8	10			
				5,132	7	4
				£17,857	16	9

5172. I see that here again, as so often is the case in our system, there is some combination of authority. The guardians have to a certain extent authority over those registrars, and the Registrar General has

also a certain kind of authority, he seems to have the power of dismissal. Do you find any confusion from that source?—The Registrar General has the power of fixing the qualifications of the registrars. It has happened that the guardians appointed a registrar who could not write, or could write only very badly, and the Registrar General thereupon instituted a sort of examination; he puts questions which they have to answer in the presence of the superintendent registrar. Those answers are sent to the Registrar General and he has to approve the appointment before it can be made.

5173. Does he exercise any further authority beyond the mere examination?—He has two inspectors who go round the country and ascertain how they perform their duties. Those inspectors make very minute inquiries as to the discharge of the duties of the registrar and the Registrar General dismisses the registrar if he finds that he does not discharge his duty properly.

5174. Do you find that there is any feeling of resentment on the part of the guardians to this interference with that officer, who is to a certain extent under their control?—I am not aware that there is. The Registrar General exercises his authority, of course, with great discretion, and does not interfere unnecessarily, and always dismisses a man with some regret. As registrars they are not under the control of the guardians.

5175. Reverting for one moment to the nature of the authority; how would you arrange in such a case as this, where they have a union which is partly town and partly country, and where the town is one of some size, perhaps 30,000 inhabitants, what would you make the authority in such a case; do you propose having the local board, or the corporation, or both?—I should make the corporation the supreme authority in those cases.

5176. But not over the country district?—That would have to be carefully considered. Country districts, I think should be dealt with under this other board of which we have been speaking; that is to say, the Local Government Board, as I would call it, giving up the title of guardians.

5177. In that case you would leave your local board in the centre of the district, namely, in the town; would you leave the surrounding districts, namely, the country districts, under the board of guardians which you suggest?—Yes; that is what you do now, and I do not see how you could obviate that inconvenience. A great inconvenience frequently arises from that source. For instance, I live at Bromley, in Kent, which is out of the metropolitan area, and the board cannot drain into the metropolitan outfall. That case occurs in every town in the kingdom. I would suggest that the local boards and the towns should be allowed to appoint joint committees to carry on drainage, river conservancy, or any other great operation of that kind requiring combined action.

5178. You have suggested, and so have other witnesses very competent to express an opinion, that there ought to be some registration of disease; now disease varies very much in its kind, and perhaps a second disease in some individual supervenes upon the first, would you have more than one report in each case; would you report once for all, or report when any new circumstance arises?—That is an important medical question. In hospitals, for instance, it happens that a man is sent in for one disease, and is attacked by another. In the army that case occurred, and we have provided for it in a system of registration which we suggested in the army report, and we have met all those difficulties. We state both cases where the disease is really distinct.

5179. Such a report might have reference to the question of atmospheric conditions, because a bad state of the atmosphere greatly aggravates disease in some of its stages, where on the contrary the improvement of atmospheric condition might greatly mitigate the symptoms?—Yes.

5180. When you have a report of that kind to make you might show in one column the state of the atmosphere at different times, the changes in the temperature, and the direction of the wind, and another column would show that the same patient had either improved in health or had become much worse at some point of time?—That would have to be left to the individual observation of the medical man; it is impossible to deal with it as a public measure.

5181. You mentioned some very interesting sources of error in the rate of mortality arising from the circumstances which you mentioned; do you attach any importance to one source of error which has been suggested to me, namely, that in such districts as the residential quarter of London, where the domestic servants bear a considerable proportion to the entire population, the servants become unwell and leave their service, and go and die in country districts?—That has a considerable effect.

5182. Do you think that the effect is such, taking any district which is to be found in your tables, as to seriously affect the proportion?—I think it has. I think there are parts of London which appear to have less mortality than they really experience through that cause.

5183. That being a sensible per-centage?—Not a per-centage, perhaps, but it produces a sensible effect.

5184. I fear that many children in the early age die from preventible causes, from causes not sanitary, but which arise from neglect or ignorance on the part of the mother. I presume that you would hope that the reports which you suggest would direct more attention to that painful subject, and that a remedy for that evil would probably arise?—I think it would. An improper diet of children I believe to be a frequent cause of disease and death.

5185. And the leaving of the children while the mother is gaining her livelihood?—That is another source.

5186. Have you formed any opinion upon this point: Do you think that the drains which have been constructed in so many towns and so many districts have been the source of disease from the discharge of gases, or the like?—I think in certain cases they have; it is very probable.

5187. Do you think that there have beeen any cases where they have almost caused more mischief than they have cured?—I should not say that; but where there is no proper provision for the ventilation of sewers, and for carrying away those noxious vapours, the sewers have undoubtedly distributed disease through the population. There have been cases of that at Croydon and other places, where the drainage is otherwise good.

5188. Do you think it would be possible for the central authority to lay down any regulations which should compel the construction of sewers in such a manner that this evil might be reduced to the least possible proportions?—I think that the central authority might.

5189. (*Earl of Romney.*) Was I right in believing you to state as a suggestion that in every case of death an inquiry should be made by a public officer?—Yes.

5190. And in cases of suspicion by the coroner?—Yes.

5191. And in other cases by some other officer whom you wish to see appointed?—Yes, certainly.

5192. Did you not fortify that suggestion by stating, that that was a provision of the ancient law?—Yes. The ancient law inquired, in all cases, into the cause of death, where the cause appeared to admit of removal. The ancient law took all violent deaths, which were great sources of death in the early ages; it took sudden deaths which might have been suspected to be caused by violence, and it did it on the principle that it had the means of preventing deaths by violence. Now we know that we have the means of preventing disease from other sources, from plagues and pestilence. Therefore in Queen Elizabeth's time they began to call attention to deaths by disease other than by violence, and that was carried out in London. We have got reports of the causes of death in London, and we

know that those causes are infinitely more fatal than are all murderers or persons who kill people by violence; and for that reason I say that we ought to inquire into those causes, which admit of remedy to as great an extent almost as death by direct criminal agency.

5193. Who conducted that investigation in former days?—In London there were searchers appointed to go to every house and inquire what the cause of death was. I have given an account of the mechanism employed in the paper which I have submitted to the Commission. (*See Q.* 4469, p. 248, *and Appendix*, p. xxii.) There were two searchers, generally women. They were laughed at a good deal, but they supplied information to the clerks who published that information about the diseases of London, and that information has been of the utmost value.

5194. At what time did they cease to exercise their functions?—They were continued down to 1837. The Registrar General took up the inquiry from that point, and has carried it on down to the present day. The parish clerks continued to publish those bills of mortality for London down to that date.

5195. Did that exist only in London?—Only in London.

5196. You wish, do you not, to see it carried out over the whole country?—It is carried out now over the whole country, but carried out imperfectly. I wish to see it carried out by persons competent to make the inquiry effectually.

5197. Do you wish that those persons should go into houses and make inquiries for themselves?—I propose that when a death occurs in a family, if there is a medical attendant, information should be asked from that medical attendant, and where he gives a certificate it should be accepted without any further inquiry; but when there is no medical attendant, or where the medical attendant refuses to give information, then the registration medical officer should go to the house, inquire into the cause of death, and give a certificate.

5198. Are you aware that in certain cases the Court of Queen's Bench have rather censured coroners for intruding themselves into houses for the purpose of holding inquests?—I was not aware of that. There are many cases, I think, in which the inquiries now conducted by the coroner might be advantageously conducted by such a registration medical officer as I have been speaking of.

5199. (*Mr. Whitbread.*) Upon a death taking place, by the Act of the 6th and 7th William the Fourth, chapter 86, the owner of the house or other person present may give information to the registrar?—The 25th Section is as follows: "And be it enacted, that "some person present at the death, or in attendance "during the last illness of every person dying, or "in the case of the death, illness, inability, or default "of all such persons, the occupier of the house or "tenement, or, if the occupier be the person who "shall have died, some inmate of the house or tene-"ment in which such death shall have happened, shall, "within eight days next after the day of such death, "give information, upon being requested to do so, to "the said registrar, according to the best of his or "her knowledge or belief, of the several particulars "hereby required to be known and registered touching "the death of such person."

5200. By Section 19 it is enacted that the parent or occupier of the house in which a death happens shall within five days give notice of the death to the registrar of the district?—Yes; "may" give notice.

5201. But there is no inducement, is there, to the occupier or to the parent to give such notice?—None except that the body is not usually buried without the registrar's certificate.

5202. None but that of getting the certificate?—None but that.

5203. The Act rather throws upon the registrar the duty of informing himself of the death, than making it the interest or duty of the parent or the occupier to give information immediately?—It does.

5204. Then the next step is that when the registrar receives information of the death he is entitled to ask certain questions of the parent or occupier, and he registers the death and thereupon gives a certificate?—That is so.

5205. Do you think it would be possible to induce an early registration of deaths by rather following the principle of the enactment for the registration of births, by enacting that if a person within three or four days gave information to the registrar of the death he should receive a certificate free, but if after a certain time a small fee should be charged of 1*s.*?—It would be an inducement no doubt to get a death registered.

5206. By Section 27 when a funeral takes place the clergyman or other person who buries is liable to a penalty of 10*l.* if he buries without a certificate?—Yes, that is so. The words are, "shall forfeit and "pay a sum not exceeding 10*l.* for every such "offence."

5207. Does that penalty go to the informer?—I am not aware whether it would go to the informer or not. The case has not occurred in practice, and it is not so stated in the Act.

5208. Besides the penalty of 10*l.* for burying without a certificate the person in charge of the burial ground, that is to say, the clergyman, rector, or vicar, is also required to register the funeral, is he not?—He is.

5209. They are required, are they not, by this Act to register?—Not to register the death. I am not aware that they are bound to register the burial, at least not under this Act. This Act refers to the registration of death by the registrar.

5210. But the clergyman is required, is he not, to furnish the registrar with a copy of the registry that he keeps of burials?—No.

5211. You are not aware of any comparison being made between the registry of deaths as kept by the registrar and the registry of burials as kept by the guardian or the overseer of the burial ground?—I am not aware that any such comparison is made in reference to that. I am aware that it is very important that that comparison should be made. The committee of the Statistical Society drew up some amendments of the Registration Act, which we suggested in a paper, and amongst other things we suggested that the particulars of the burial register should be sent by the clergyman, as you have been intimating, to the registrar, and that it should be entered on his register, and that suggestion, though not carried out in this country, has been carried out in Australia. I fully admit the importance of the burial certificate. I hand in a form showing that it is recorded upon the register of Australia, as it is to be found at page lxxi. of the Registrar General's Thirtieth Annual Report. I may state that in this thirtieth report you have a summary of the registration all over our colonies, which has been collected at great trouble, and which is very instructive.

DEATHS IN THE DISTRICT OF *MELBOURNE*, IN VICTORIA.
REGISTERED BY *JOHN WILLIAMS*.

No.	Description. When and where died.	Name and Surname, Rank or Profession.	Sex and Age.	(1) Cause of Death. (2) Duration of last Illness. (3) Medical Attendant by whom certified, and (4) When he last saw deceased.	Name and Surname of Father and Mother, Maiden Name, if known, with Rank or Profession.	Signature, Description, and Residence of Informant.	(1) Signature of Deputy Registrar. (2) Date, and (3) Where registered.	If Burial registered. When and where buried. Undertaker by whom certified.	If Burial registered. Name and Religion of Minister, or Names of Witnesses of Burial.	Where Born, and how long in the Australian Colonies, stating which.	If Deceased was married. (1) Where, and at what (2) Age, and to (3) Whom.	If Deceased was married. Issue in order of Birth, their Names and Ages.
1	*23rd February 1864. 23, Collins Street East, Melbourne.*	*William John Nicholls, Carpenter.*	*Male, 30 years.*	(1) *Phthisis.* (2) *4 months.* (3) *J. Hutchins.* (1) *22nd February 1864.*	*William Henry Nicholls, Carpenter. Lucy Nicholls, formerly Mercer.*	*C. Nicholls, Brother, 4 Melbourne.*	(1) *John Williams.* (2) *24th February 1864.* (3) *Melbourne.*	*25th February 1864. General Cemetery, Melbourne. John Daly.*	*James Broughton. Church of England.*	*Manchester, England. 2 years in New South Wales, 3 years in Victoria.*	(1) *Melbourne, Victoria.* (2) *25.* (3) *Fanny Bright.*	*John, 4 years. Thomas (dead). Helen, 1 year.*

DEATHS IN THE DISTRICT OF *BALLARAT*, IN VICTORIA.
REGISTERED BY *HENRY BURNS*.

2	*28th February 1864. Sebastopol Reef, Ballarat.*	*Thomas King, Miner.*	*Male, 40 years.*	(1) *Earth falling on him in a drive whilst engaged in mining.* (2) *Sudden death, Verdict at Inquest, held by J. Wilson, Coroner, on 25th February 1864.*	*(Not known.)*	*Henry Nolan, Sergeant of Police, present at Inquest, Ballarat.*	(1) *Henry Burns.* (2) *25th February 1864.* (3) *Ballarat.*	*26th February 1864. Cemetery, Ballarat. Henry Harris.*	*John Jones. Henry Arnold.*	*Lewes, Sussex. 10 years in Victoria.*	(1) *Generally reported to have been married, particulars not known* (2) *Not known.* (3) *Not known.*	*Not known.*

5211*a*. (*Chairman.*) Is there any other suggestion which you would wish to make to the Commission?—I should like to say one word upon the great importance of this inquiry which you are conducting; and I may prove its importance by citing two or three figures which I have before me. I showed the other day that the population of the country is increasing rapidly, and that it is increasing chiefly in the cities. The country population now is very nearly the same as it was in 1801. By a law which is quite constant the mortality increases rapidly with the density of the population. In our thinnest districts the mortality is about 15 per 1,000; in our densest districts it ranges from 28 to 33, so that the mere condensation of population has a tendency to increase the mortality; the mortality in towns being much greater than in the country by a constant law that no doubt can be obviated by sanitary measures. I may mention, for instance, that where you have 179 persons to a square mile there the mortality is 17, 18, and 19; where your density of population varies from 201 to 456 the mortality varies from 20 to 21 and 22; where your density of population varies from 780 to 1,274 and 1,909 on the square mile the mortality varies from 23 to 25, and where the density ranges from 3,000 and upwards the mortality ranges from 26 to 33. So that there is a constant connexion between the density of population and the mortality, under the present arrangements. I do not believe that connexion is absolutely necessary; I believe that our towns might be made nearly as healthy as some of these country districts, perhaps having a mortality from 17 to 20, and that by measures such as this Commission is now inquiring into. The immense importance of the subject will further appear if I state that the deaths in the United Kingdom in 1867 amounted to 662,258. By the law which we have gained from a study of friendly societies and other sources we know that there are two constantly sick to every annual death, and that would imply, therefore, that in the United Kingdom we have about 1,324,000 persons constantly sick, and that from illness of some severity; if you put down the infirm and those who are disabled in various ways, it makes the proportion to the deaths about three, so that you would have about 2,000,000 persons constantly sick and infirm; but at the rate of mortality prevailing in what we have called the healthy parts of the country the deaths instead of being 662,000 would be 513,000, and the number constantly sick instead of being 1,324,000 would be only 1,025,000; so that if the sanitary condition of the country is put under such favourable conditions as we may hope to see, we may calculate that there will be an immense reduction in the mortality, while there will be a very large reduction in the sickness and all the evil consequences of sickness, and what is perhaps still more important, we may hope to see the English race grow stronger, happier, and more vigorous in every respect.

The witness withdrew.

(36.) CHARLES WALPOLE, Esq., examined.

C. Walpole, Esq.

5212. (*Chairman.*) I think that you are chairman of the board of the Surbiton Improvement Commissioners?—I am.

5213. How long has Surbiton been governed by a local board?—Since 1855, when the local Act was passed, forming the body of commissioners.

5214. For what purpose or purposes was the board formed?—The object in obtaining that local Act was chiefly to deal with the question of drainage, and the improvement of the health of the place; but the Act gave other powers, such as watering the roads and lighting and general management.

5215. Then the commissioners have general powers of local government?—Yes. The Act which is called the Towns Improvement Clauses Act is incorporated in that Act. Some time ago the habit was with all local Acts to incorporate the Towns Improvement Clauses Act, and all the clauses in that Act were to be read as if they were in the local Acts, and it is by that Act we are governed.

5216. Can you state the population of Surbiton?—It has considerably increased lately. The present number of houses is 1,220, and it is estimated that the population is over 7,000.

5217. Do you know the acreage?—The district is a good deal agricultural, but it is in contemplation that perhaps the whole of it some day or other will be covered with houses. The acreage is about 1,800 acres, and of that about one-third is already built upon, but it is a neighbourhood where building sets in very fast.

5218. It lies upon the Thames, does it not?—One

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side of it is bordered by the Thames, and it adjoins the ancient borough of Kingston-on-Thames on another side.

5219. How far have the Commissioners been successful in dealing with the sewage?—When first they took that subject up the place was very offensive by reason of the foul deposits of sewage in the ditches very nearly adjoining the houses, and their attention was first turned to clearing those nuisances away, and for that purpose they constructed considerable sewers at considerable expense for them, and it has been a complete success so far as that matter goes in purifying the air and making the place habitable, which, in one sense, it was not before.

5220. When was this done?—It was done after we had been in existence about four years as a body, about 1859.

5221. Is the condition of the river said to be affected by what has been done?—I should mention that under the Towns Improvement Clauses Act, sec. 24, the obligation is to construct sewers, and you are invited to carry them either into the sea or into some public river, or to cause the refuse from the sewers to be collected for sale for agricultural purposes, so that it should not be a nuisance. At the time when our operations commenced the utilization of sewage had made no progress at all; the generally prevailing habit was to carry the drains into the rivers.

5222. Are you now talking of your local Act of 1855?—I am talking of the Towns Improvement Clauses Act which our local Act incorporates. The date of that Act is the 10th & 11th of Vict. c. 34, and the short title is, "The Towns Improvement Clauses Act." So, complying with that Act, we made our drains and conducted them all towards the river. We did not make an entrance into the river, because there is a large intercepting sewer belonging to the Lambeth waterworks company which they themselves made for carrying the sewage of that part of the locality down below where they draw the water from the Thames. And as you are aware it was considered in those days right to go into a river with your sewage, we in our Act had a clause inserted, after discussion with them, claiming the right as they had shut out that part of the river by their great sewer to use it as the outfall for Surbiton, and that was conceded as a matter of necessity. Under that clause which gave us that right we entered their sewer, and thus the sewage found its way into the river. I mention that as introductory to an answer to the question which you put to me as to the effect of our sewage works upon the river. In answer to that question I should say that according to the present feeling the desire is with us as with everybody else to keep the sewage out of the river, and we live in hope that some way will be devised of doing that effectually, but I think I am pretty free to say that at the present time the benefit derived from removing the sewage from the houses, and the vicinity of houses, is far greater than any mischief which is done to health by putting it into the river.

5223. A benefit done to A to the injury of B?—Quite so, I say that. But I mean to say that the condition of the River Thames is not perceptibly affected in consequence of what has been done in our locality, nevertheless I do not wish to be understood as recommending that there should be any needless delay in diverting it from the river.

5224. Surbiton would be none the worse you think if the people down the river drank their sewage?—The river for all ordinary purposes is used as it used to be for bathing and so forth, and no complaint arises, I think I may safely say, in consequence of the admixture of sewage which has taken place.

5225. Have any steps been taken to comply with the Thames Conservancy Act of 1867?—We took the best steps we could at Surbiton, as did the corporation at Kingston-upon-Thames, which I may say is a much larger and more important body than we are. The first Act that was passed was "The Thames Navigation Act, 1866," which forbade the upper towns on the Thames above Staines putting any sewage into the river after a limited time. That was followed, as we anticipated it would be, by an Act in the following year which laid the same injunction upon us, and that is the Act called "The Thames Conservancy Act, 1867." In the interval before the Act of 1867 passed, knowing that it was coming, we took the most active steps we could to meet the difficulty. We had sundry meetings in the town hall at Kingston, by the invitation of the mayor. Surbiton and seven or eight or more of the adjoining parishes, Wimbledon being one of the largest, were there, and Teddington was there, and Thames Ditton, and Moulsey, and a variety of places sent delegates to the town hall to consider this matter. We had a general desire to accomplish something, but we were hampered very much by the idea of the expense and the difficulty of knowing what was best to be done, and the result was that we resolved to go with a deputation to Sir Stafford Northcote, who was at that time at the Board of Trade, and had the conduct of the bill, to state our pitiable case to him, and Sir Stafford Northcote received us very kindly, and was very desirous of assisting us in any way so long as we did not impede the progress of the bill. What we wanted was, if he would accompany it by some other bill affording some facilities which would enable us to get over the difficulties which we had before us. Shortly after that he asked us to state whether we had any definite idea what to do. Upon that we laid before him a rather comprehensive scheme for carrying all the sewage of our locality and many others, surrounding what is called the metropolitan area, away eastwards in the same direction as the metropolitan sewage goes. Our first object was to enter the metropolitan system at Putney, but the Metropolitan Board of Works entirely refused to let us in on account of the diameter of their sewer. We next laid out a scheme,—I do not mean a surveyor's plan,—but we put it together after taking the best advice we could, and were favoured by some assistance by Mr. Bazalgette in designing the scheme, which was for forming an outer metropolitan area. The cost of that was startling, and it rather made the delegates from those different places differ in opinion, although we wished to go on together harmoniously; but still they were so far united that they allowed us to send this suggestion in. It was referred to Mr. Rawlinson, of the Home Office, who objected, naturally and properly, to our adding any to the metropolitan sewage, which at that time and still goes into the river at Crossness, because our idea then was to get over the difficulty by carrying it in that direction, so as to avail ourselves of their pumping apparatus. We were told, however, that we must not go in that direction at all. That seemed a very considerable difficulty, and we got sufficient dissension among us to prevent our going on with any other suggestion. We then went to Parliament as opponents to the bill, or rather to ask for consideration, and we gained what we thought a considerable advantage by so doing. I have a paper here which states the case of Surbiton, in page 5 of which we mention what took place at that time, and it was this—we went before the committee of the House of Commons, who took an account of our condition. Richmond joined us in doing so, and the committee made a special report to the effect that "some special legislation is necessary to prevent the "bill from acting injuriously to their interests," that is to say, of the townships who then presented themselves before the committee. The report went on to say, "That the inhabitants of the towns named in the "report would, it appears, meet with great difficulties "in attempting to construct separate systems of "sewerage; and in the opinion of the committee "these will be best met by a combination of the "towns, or some of them amongst themselves, for the "purpose of carrying out the operations which will be "rendered necessary by the bill;" and the report went on to recommend "that facilities for such combination "should be afforded to the said towns; that, when "necessary, the time within which the present sys-"tems of sewerage must be discontinued should be

" extended." Having got that recommendation from the committee, we rested satisfied that some legislation would be given to us.

5226. Was that the committee of the House of Commons to which the Thames Navigation Bill of 1867 was referred?—Yes; Lord Henley was in the chair. I have a copy here of the entire of the special report, dated the 11th of April 1867, which I beg to hand in, and it is as follows:

11th April 1867.

SPECIAL REPORT.

REPORT from the COMMITTEE on GROUP O of PRIVATE BILLS.—THAMES NAVIGATION BILL.

Lord Henley reported from the Committee on Group O of Private Bills: That in the case of the Thames Navigation Bill they had agreed to the following Special Report:—

Your Committee are of opinion that the following towns, namely, Richmond, Kingston, Surbiton, East and West Moulsey, New Malden, and Hampton Wick, which appeared by their representatives as opponents to the Bill, are affected in so exceptionable a manner by its operations, that some special legislation is necessary to prevent its acting injuriously to their interests. By Clause 64 of the Thames Navigation Bill of 1866, the operation of which is extended by the present Bill to the whole of the district which it affects, the Conservators of the Thames are obliged to give notice to the authorities of the above-named towns, within a reasonable time after the fact of any sewers or outfalls carrying their offensive matter from these towns into the Thames has come to their knowledge.

By these notices the discontinuance of the nuisance is to be required within not less than 12 months, or more than 3 years, from the service of the notice.

It is possible, by a subsequent clause, for the authorities of the towns, on application to the Board of Trade, to obtain an extension of the time so allowed; but, notwithstanding this, it might occur in cases where the discontinuance of the nuisance was pressed on unduly by the conservators, and no relief allowed by the Board of Trade, that towns where considerable difficulties exist in the construction of a new system of sewage might be placed in a position of great embarrassment with regard to the required alterations.

In the cases of Richmond, Kingston, and the smaller towns in their neighbourhood, the difficulty of obtaining land for the necessary works would be very great. The whole of the country surrounding these towns is suitable for suburban building purposes, and the value of land is consequently very high. The property which adjoins the town of Richmond upon two sides belongs almost wholly to the Crown, and the evidence before the Committee shows that very great difficulty exists in obtaining any portion of it, or the right to enter upon it for sewage purposes.

When land has been acquired, time would be required for maturing plans for the proposed works, and for obtaining powers to raise the necessary funds and to charge them upon the rates of the district.

The inhabitants of the towns named in this Report would, it appears, meet with great difficulties in attempting to construct separate systems of sewage; and in the opinion of the Committee these will be best met by a combination of the towns, or some of them, amongst themselves, for the purpose of carrying out the operations which will be rendered necessary by the bill.

Your Committee therefore recommend that facilities for such combination should be afforded to the said towns; that, when necessary, the time within which the present systems of sewage must be discontinued should be extended; and that, if possible, opportunities should be allowed to the local authorities of availing themselves of the lands in their neighbourhood belonging to the Crown.

By these means the several townships above alluded to would, in the opinion of your Committee, be materially assisted in complying with the enactments of the bill now under consideration.

Having got to that point that a recommendation was made in our favour, we gained this step by it. The Duke of Richmond, who succeeded Sir Stafford Northcote at the Board of Trade, was the means of passing another bill, called the Sewage Utilization Act, 1865, the 28th & 29th Victoria, chapter 75, which contained certain clauses intended, among other purposes, for benefiting such places as Kingston, Surbiton, and Richmond. It contained two clauses, 7 and 9, the object of which was to enable the townships to take compulsory possession of land for the purpose of making sewage farms, and secondly to enable them to combine and make one joint scheme uniting in the expense to pay for this united action. That was the position we were then in, since which we have made no progress at all.

5227. What was your difficulty in acting under the powers of those two sections?—The great difficulty as regards obtaining land was the great value of land in our neighbourhood, and within any reasonable distance from us. The land is all looked upon as all building land, or what will become building land, and any attempt to get possession of it for those purposes would immediately raise the price to such a figure that it would be almost beyond any powers of a small board to purchase it, and the attempt to do so would provoke opposition from the neighbouring owners of property who intend to lay out villas, and streets, and crescents, and so forth, in the vicinity.

5228. What was the difficulty in forming a combined district under the ninth section?—I will just add one word with regard to the first point, which is that the Kingston Corporation who voluntarily set to work to do their best upon this point of taking land, have this very year gone through a very unpleasant process, and met with a very severe defeat. They fixed upon Ham Fields, which adjoin their borough, and under the powers given in this Act they set to work and gave the necessary notices, and claimed to take the whole of Ham Fields to utilize their sewage upon. They met with immediate opposition, as was to be expected, chiefly from Lord Dysart who lives at Ham, and members of the French Royal Family who reside in that locality. I think Lord Russell, who lives in Richmond Park, was an opponent, and I believe Lady Waldegrave and many other persons also. Mr. Rawlinson was sent down, under the powers of the Act, to sit and hear the application and the objections; and the result was that Mr. Rawlinson, although notoriously favourable to all schemes of sewage irrigation, having heard all the evidence in favour of the scheme, stopped the inquiry and said that he would make his report. The report was unfavourable, and the conclusion he came to was based upon the fact that the price of the land was so great, and the opposition so great, that it was absolutely wrong to force it, even if the medical evidence were true that a sewage farm was not injurious to health. I believe he felt that the objection was so strong that it would be improper to force it, and he reported against the scheme. The result of that is that they have incurred an expense of between 800*l.* and 900*l.*; and the unfortunate borough of Kingston are now taking counsel's opinion whether they can possibly levy a retrospective rate to pay for that expense, and that is the difficulty which they are now in. I mention that as the best illustration that I can give of the difficulties that a neighbourhood like ours has to contend with in using the 7th section of that Act. With your permission I will now proceed to the 9th section, which is that with regard to forming districts. There is a desire on the part of some persons to form districts, and there is a desire on the part of some to act alone. But the strongest desire of all is to shirk expense; and when you make any advance towards forming a district, you will find a considerable number think that cesspools are the best way of draining a town of any in the world, and that if when the time allowed expires, and we are under a bar to go into the river, they will simply construct cesspools for every house, and will deal with it in that manner. That has been put forward by some districts gravely. Then as regards the larger proportion, I think that they are very much afraid of the expense that they would have in dragging the smaller districts along with them, whereas the smaller districts are equally opposed because they believe that they would be absorbed in the larger body, who would lay upon them heavy expenses, much more than they can bear; and so you can get no hearty support to any attempt to make a combination in any direction whatever. That I think is the result of my experience.

5229. What course would you wish to pursue?—With regard to the best mode of dealing with the question, I think any course that we pursue should be thorough and complete. Of course one would like the least expense; but if no inexpensive plan can be adopted, I should wish Parliament to pass an Act which would make the union of parishes in certain localities compulsory upon the authorities, the Home Office being the judge whether such compulsion should be put upon the parishes.

5230. You mean a union for that special purpose?—Yes, for that special purpose. A good many advocate earth-closets, which they put forward as a reason for not moving; but with regard to earth-closets I think that for any rural place—a gardener's cottage, or a lodge, or a private place adjoining a stable, or anything of that kind—that system would be perfect. I know a gentleman in my neighbourhood who has tried it, and finds nothing can be more complete or convenient, but I cannot conceive that it could be made of universal application in a large populous place where there are many living in the same house, lodgers and children, and so forth.

5231. But anybody who had adopted a compulsory union for the purpose of sewage utilization must first have decided on the best system of sewage utilization?—That would not be my meaning. My notion is this—that a union might be made—as the Metropolitan Board of Works in London—on whom the responsibility of dealing with the question should rest, and that they should meet and deliberate as to what they would do, and I believe that would be the only safe way of bringing those people in combination. I think there must be representatives from every township united to take care that what was done was not oppressive to them.

5232. We have decided here not to enter into any discussion of rival systems, but perhaps you could in one word tell us whether you yourself have made up your mind in favour either of the cesspool system, or of earth-closets, or of filtration?—I have most decidedly made up my mind that I would abandon all resort to cesspools, except in particular cases where it is a necessity, and I think there is no need to dwell upon that because it is so generally admitted. I have just spoken of earth-closets, and I think they are not by any means to be rejected, but that it is very desirable to encourage the idea of using them where suitable places can be found for them, but I think that to attempt them in large and populous places would be an impossibility. What I wish very much is to see the project of purifying the water by a chemical process more examined into and carried further, because I think it would save an enormous outlay of money. We must if we resort to the other more favoured plan carry works on at great expense, and carry the matter to a great distance. I think that the plan of disinfecting and deodorising sewage has made some progress, and has not been sufficiently tested to be discarded as a failure, and I should be very glad if anything could be done to bring forward that particular view. I have brought with me a bottle of water which I have had since August last (*producing the same*). It looks very white and clear, there is not any sediment in it, and I think it is entirely pure from any smell. That water I saw deodorised by a gentleman whom I have no sort of connexion with, except that he volunteered his services at Surbiton, and we should very gladly have gone to work and got over our difficulties with this process if we could.

5233. Are you prepared to drink it?—I should not at all mind taking a glass of brandy and water made with it; I do not mean to say that I am a chemist or know anything about it, but I think when I show that as the result of many months keeping it is encouraging.

5234. Do you know where that was taken from?—It was taken out of a sewer falling into the Thames at Hammersmith, and I saw it very black. I had nothing to do with it, except that I wanted to see the matter well looked into before we went into more expensive expedients. I saw it in a can as black as my shoe, and I saw it passed through two filters, with certain preparations which I know nothing of, but I carried that bottle of water away, and I have kept it ever since.

5235. (*Sir Thomas Watson.*) Have you uncorked it since?—Yes, this morning, but one member of our board is a medical man, and he had some at the same time, and last night he showed me two bottles, and uncorked them, and drew my attention to the fact that there was neither sediment nor smell. I mention this because I think that it is to the interest of townships who have got these heavy expenses to meet, to have those sort of things tested thoroughly before they are rejected. I have no sort of interest in recommending this any more than any other plan.

5236. (*Chairman.*) Assuming for the purposes of this question sewage irrigation to be decided upon, what course must be pursued for the purpose in the Thames valley between Staines and Putney?—The conclusion which I have come to upon that point in conjunction with many others who have given great attention to it is, that you must carry it to a considerable distance from the immediate vicinity of any of the lower towns along the Thames valley the whole length from Staines to Putney, which under this particular Act are forbidden to enter the Thames. The upper townships are apart one from the other. Reading, and Windsor, and Oxford and such places can deal with their own, because they have plenty of land around them, but if you look at the country lying between Weybridge or Chertsey and Putney, I believe it will be impossible to get any tract of land of sufficient extent that would be useful for this purpose for all time for any one of those individual places, and therefore I should wish to combine them altogether in one great work and to have one continuous sewer which should carry the sewage all away for the purpose of spreading it upon the land. I look upon it that we are shut out from going with the natural fall of the river, because we can do nothing there but place it in the river in the broader part, which would be forbidden to us, and I believe it will be better to go in the opposite direction, although it is against the fall of the ground, and aided by pumping to take it clear away towards that great tract of land which is usually called Bagshot Heath, which lies about Woking and that part of the country.

5237. How many miles distant?—About 12 or 13 miles.

5238. If such a plan was formed what should be the constitution of the board of management for disposing of the sewage of such a locality?—I think that every township in a locality like that should have some local government, and that the sooner the smaller parishes are brought under the Local Government Act the better. Then you would have a board, and I should like each one of those boards to send a member or members to form one central board, confining their attention solely to this matter of sewage outfall, leaving each separate board to deal with its own local matters as to the collection of it by their own lateral drains, but make one joint purse and one joint work to carry the sewage by a main outfall away to some distant part, and the question would be which would be the best part, say the vicinity of Woking.

5239. On what principle should the several combined townships be rated?—I think that is a very important thing to be attended to, because otherwise there would be very great unfairness; it might be that if you combined all those townships you might find one or two which could deal with their own sewage, and to lug them in with the rest in one common rate would be a hardship, so that I think there should be power in that board to form separate districts or one united district, as it might be most desirable. In the Towns Improvement Clauses Act, under which we are governed, there are two sections, 161 and 162, which empower us to make separate systems for particular streets or localities. Under that Act we have as many as four drainage districts, and I think the same system should be applied to this united area.

I myself believe that all those towns will be brought into one, and I would bring all into one if I could; but I would have the power for that board to decide that town A, town B, or town C, should be left out to work their own district on their own separate rating; all the rest, I think, should contribute to the general rate for making this great outfall and for the working expenses. I think there should be some little gradation of expense according to the additional cost that the situation of some towns inflicted upon the general purse by lying low and causing more pumping and current expenses than the others. I think it would be reasonable that a town lying low or further off and which could not get its sewage away by any process except by a good deal of pumping, do what they could, should bear a rather heavier expense than those who were nearer the ground on which we wanted to carry it. That strikes me as a fair principle; I think, however, that it should not be measured with such extreme exactness, but that they should all try to treat each other the best way they could with the feeling of helping each other, but at the same time with the view of equalizing the rate proportionately.

5240. (*Lieut.-Col. Ewart.*) You mentioned that you did not think that the sewage of Surbiton flowing into the river did any very great harm. Does it flow in above or below the intake of the water for the waterworks for the supply of London?—Below the Lambeth and Chelsea waterworks. We do not enter the river ourselves, but we go into a large intercepting sewer that they themselves constructed before we were a body, to keep that part of the river pure; and what we put in goes in with a large volume of their waste water, so that the quantity put in of sewage to the quantity of water is small in proportion. I do not wish it to be thought that I am opposed in any way to doing necessary works for keeping it out. But wishing as I do that the best and most permanent system should be matured before we commence operations, I do not think hurrying one six months or another, or one year or another, is of that extraordinary importance. That is what I meant by saying that there is no great mischief at present.

5241. Have you had notice served upon you by the Thames Conservancy?—Yes, we have had notice, and they have extended our time, and that extension of time expires, I believe, on the last day of August. We went before Mr. Bruce with a statement of our miseries, and he was pleased to say that we had made out such a case as convinced him that mischief might be done by our hurrying over it; and that if we made application to the conservators for a further extension of time, he would recommend that we should have the time extended until this Commission which is now sitting should be in a condition to make a report. Having received that strong recommendation from him, we are anticipating that we shall have a further extension until such time as your report is made.

5242. (*Mr. Bircham.*) You have found a great complication of interests in that part of the Thames valley which you would group compulsorily together for carrying out a joint work, such as difference of levels and different proportion of gain derived by different parts of the district; could you therefore with that in view suggest any general principles to be adopted in legislation upon which parishes could be grouped for such purposes?—My impression is that I have not found that great difficulty with regard to any townships lying say within two miles of the river between Chertsey and Putney. I should say that there would be no great difficulty in bringing them into one common accord, and raising a rate off them with perfect fairness.

5243. That is to say there would be no great difficulty in making a special scheme to meet the case of Kingston, Surbiton, Thames Ditton, Moulsey, and all those parishes trending up towards Woking?—Yes, that is so.

5244. In making that particular plan, have you had in view the different physical and other conditions of the population that would be effected by that scheme?—Yes.

5245. It would be very desirable to find some general principle upon which parishes or townships could be grouped; does it not occur to you from the experience of the group you have proposed to form, that there would be great difficulty in laying down any general principle upon which that could be done?—No; I think it would be easy, judging by my own experience of Surbiton, where we have a population, some lying in one locality and some in another. When we began we had to make our main tunnel sewer which is carried through the hill towards the river, and the very difficulty that you are putting now to me as a question presented itself to us, and it was very much dwelt upon that there would be great inequality and great injustice if we made the work and levied a rate upon them all, because some were so placed that they should pay hardly anything in proportion to others who, regard being had to their own special difficulties, should in fairness bear the greater part of the expense. I was of that impression myself at first, but I have sat at the board 12 years, and I have found as we went on that the nearer we came to it the difficulties vanished in such a way that I look back now with astonishment at the difficulties that I then saw.

5246. Still you have been dealing there with one aggregation of population?—Yes. But still where the advantages of the situation of some were such that they thought they could drain themselves extremely cheaply, and of course they thought it would be a very expensive and unfair thing to them to be heavily rated for the benefit of others; but we persuaded them all at last to believe that it was for their common interest to join together and for the strong to pull the weak through.

5247. What you have suggested is a union of parishes beginning with a thick population and going through rural districts, and ultimately coming to one of very sparse population; do you think that legislation of a general kind could be enacted by which parishes and places under those conditions could be grouped together?—I do, and I think that the difficulty in your mind, if I see it, is met in this way, that those which are sparse at present and apparently agricultural will one day become suburban districts in a sense. If you put them into a group, they will to a certain extent be making a present low payment for a great prospective advantage, because you will levy the rate upon the value of property as it stands, the contributions that they make will be very small compared with those acres that are covered with expensive buildings; therefore I think it will be more for the advantage of those semi-rural places to commence such a work as this and join in the paying for it while their rateable value is low than to wait till by-and-by when their rateable value will be higher. My notion is that that is the feeling of towns like Kingston, that Kingston will bear the brunt of the expense of those very rural places, for practically we are making frontage ground, as I would call it, for those places which are at present rural.

5248. Does not it rather occur to you that it is easier to make plans when you know all the conditions of a particular locality, but that it must be very difficult to lay down any general law which could be forced upon any unknown aggregation of populations?—I think it would be very objectionable to have a stereotyped law to be forced upon such a board as I speak of, or other such boards, but I have not the least despair, having representatives of those townships, to bring them all of one accord in a general work.

5249. You had no health government, I think, in Surbiton before the passing of your Act of 1855?—No, we were a mere parish or part of the parish of Kingston.

5250. How is Surbiton now supplied with water?—By the Lambeth Water Company.

5251. You take your pure water from the Thames?—Yes.

5252. Were you not stopped from sending your

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sewage into the Thames on the ground of a nuisance, before the Thames Conservancy Act passed?—No.

5253. Was not there an application, and a successful application, to the Court of Chancery, to prevent the delivery of the Kingston sewage into the Thames?—Kingston has one governing body and Surbiton has another:—Action was taken against Kingston to prevent their constructing the system of sewers which they were preparing to construct, or rather before they had finished them. They were then entering the Thames, and there was action taken against Kingston in the manner you say; it was before Vice-Chancellor Wood, now Lord Chancellor, and in his judgment which was in favour of the town who were permitted to go on, he referred to the evidence given as to Surbiton, and he laid it down that, from the evidence before him, he was satisfied that there was no ground for making a complaint or granting an injunction as regards anything that was done there, which is the basis of the observation I made just now that the pressure which I spoke of is not so great.

5254. Taking the pure water from the Thames, you are surely not contending that you ought to expect to return it to the Thames in a foul condition?—We ought not to send it back foul. I agree to that.

5255. But that you should be content to bear considerable expense in order to obviate such mischief?—We must do it. We are prepared to do it, and the law makes us do it; but I think, seeing that the law forces us to undo what a previous law compelled us to do at great expense, we are very harshly used by that law, but we bow to it.

5256. Your difficulty is in finding land upon which to carry out your irrigating processes, or some mode of cleansing your foul water which might permit you to put it into the Thames or its natural outfall?—Yes, which difficulty has been immensely increased by the Act of Parliament under which we acted, for we brought that which would have gone away from the Thames to the Thames at considerable expense, so that all our sewers now are concentrated close by the river Thames.

5257. Have you considered at all whether there might be any legislative provision for testing what might and what might not be passed into the natural streams?—I think that to legalize any amount of pollution would be extremely unsatisfactory.

5258. Then you would be in favour of absolute prohibition?—Yes, of absolute prohibition.

5259. (*Mr. Powell.*) Was that bottle which you have produced the result of sewage matter alone, of was a certain amount of river water mixed with it?—It was taken as I am informed by the gentleman who filtered it from the mouth of the sewer, and it did not fall into the river.

5260. Before contact with the river water?—Yes. It was of a very dark colour indeed, and offensive to a degree when I saw it in that state. The subject-matter of this was not river water but sewage.

5261. Was it before that sewage discharged into or came in contact with and mixed with any water of the River Thames?—It was pure sewage water carried away from the mouth of the sewer in a pail and brought into a house; it came out of the sewer before it ever touched the river.

5262. Then the water you produce is the result of a laboratory experiment on the sewage, and not of the deodorizing process as applied to the sewage of the whole community?—As I am not a chemist I cannot tell how it was done; but what I saw done was that it was poured into a machine where there was, as I understood, a certain chemical preparation poured in along with it; the result was a subsidence, then there was filtration, and that is the result. It was a mixture of filtration and chemical application as I understand it.

5263. (*Earl of Romney.*) I suppose you argue that that which is true of a small quantity like that would be true of a large quantity?—I am not prepared positively to affirm that, but I should wish to believe it, and I want the thing to be thoroughly tested before it is finally rejected, because I believe that we should then spend hundreds where we shall otherwise have to spend thousands.

5264. Then what is your object in producing that water?—Because I think it is evident that great progress has been made in purifying sewage, and I do not despair of those who have done so much, being able to carry it out on a large scale. I do not know why they should not.

5265. Then that is your argument. You say that if that can be done with very filthy water coming out of a sewer, it can be done also with regard to water in the river on a large scale?—I should think it might, but I am not capable of judging of that.

5266. You said you thought that earth-closets might be a very good plan with a lodge or attached to a stable, but that it would not do in towns on a large scale?—I have come to that conclusion.

5267. Ashes are just as well used as earth in such places, are they not?—I have so seen it stated by those who advocate it.

5268. Do you know anything of the towns in the north of England, Manchester, Oldham, and such places?—I do not.

5269. Have you not heard that in those towns the sewage is managed entirely by ash pits?—No, I do not know that as a fact. I have seen it mentioned that ashes are so used, but what I have most read upon the subject has been a description by Mr. Menzies, the surveyor of Windsor Park, who is a great authority on this subject; and the account that he gives of it seems to me to be this, that the quantity of earth required is about half a ton to every individual per annum, and that where it has been most successfully applied, which is at the Broadmoor asylum, there is a baking room in which the clay is brought to be dried before it is fit for application. That I conceive to be quite feasible with an asylum all under one management, but I should despair of any body of Commissioners, or town councils, or any body, regulating such a system, being able to provide that earth or ashes should be collected and brought in suitable quantities and regularly used and applied. It is to be placed in a hopper and then it is to come down as water does in a watercloset; and that that supply would be regularly attended to in a proper condition is a thing that I should be inclined to despair of.

5270. Do you imagine it is impossible to use ashes without all that machinery?—From what I have read I think that ashes have been mixed with earth, but I do not believe that the ashes of a family would be enough for the wants of a family. The ashes that are collected in one day would be by no means sufficient for the use of the house I think.

5271. You do not consider it absolutely essential in the use of ashes that there must be a hopper or anything of that sort of machinery which Mr. Moule has invented?—No, I think the best way is the very simplest, to throw as much earth with a trowel as is requisite to cover what lies there, and it should be spread over it by hand; that is the plan upon which my neighbour did it with perfect success.

5272. What is the difficulty in that being done in a large town?—Because I think you would want domiciliary visits; somebody going round to see that in a family where there are three or four lodgers, and five or six children, and the man out at work, the mistress of the house attended to the dropping of this modicum of earth every time somebody used the closet, and I conceive that that would be impossible.

5273. Upon a regulated system it could be carried away, could it not, in the same way as the dust and ashes are in London?—At the end of the week, I suppose. The notion is that someone should come round, and upon that subject I think that it would be very desirable that there should be the power of insisting that those places should be kept clean; that there should be a clause in any Local Government Act providing that the commissioners or other local authorities should be able to enter, and require, when land is laid out for small streets of the poorer class of dwellings, that there

should be a proper avenue made at the back of the small streets for access for such carts as would be wanted to go round and take those things away; although very frequently it would not be used, I think, the power should be there to compel it.

5274. (*Chairman.*) Have you any further remark which you wish to make?—There is another thing which I should wish to say. I think there is a great defect relative to the arrangements for sewers, in the Acts of Parliament which relate to the management of towns, inasmuch as there is no power to compel any person laying out land, to provide a system of sewers for the use of the houses to be built. What happens is this, a man gets two or three acres of land or more and he lays it out for building, he covers over the outflow that he makes from the closet and sculleries, and he pushes it from his own locality (perhaps it is done in the night) into some neighbouring ditch; 18 months pass away before the houses are fully occupied, and the mischief arises, and then you find a frightful nuisance in a ditch on some other adjoining property, and you cannot fix any one of the occupants of those 18 houses as being the cause of it. And then what happens? you have to come and construct a sewer to relieve the neighbourhood of this nuisance, and the gain is to those speculative builders, that they make those who have good property in the neighbourhood pay for the drainage of those houses which those builders are going to add to the neighbourhood. I think that a very great grievance. I think that there should be power in any of those Acts for the Local Government to say that they forbid any person laying the foundation stone of a house or houses without first showing that they have made proper provision for the thorough drainage of all the addition that they are going to make to the neighbourhood, otherwise they will throw upon the old property which has already constructed its sewer, the cost of making sewers for the houses which they are about to build. I think it is the thing of all others, which requires amendment most, as regards these increasing neighbourhoods.

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5275. (*Mr. Bircham.*) There was a scheme, was there not, for what was called the purification of the Thames, and for lifting the sewage at Kingston by a private company to high ground towards Talworth?—That was the case.

5276. And the projectors contemplated spreading it upon agricultural land?—Yes.

5277. What prevented that scheme being carried out?—I am informed that the company was never formed and never got the money to carry it out.

5278. Were they also crippled in obtaining possession of the land?—The land that they contemplated to use they were obliged to schedule in the Act, and they had scheduled land in the neighbourhood of Kingston and Surbiton, lying in the hamlet of Talworth, which belonged to the lord lieutenant of the county, and I understand as that Bill passed through the House of Lords he opposed it to that degree that a clause was inserted preventing their taking any land belonging to that nobleman without his leave, the effect of which was to take all the compulsory power out of the Act.

5279. But it was land of an agricultural character and with no immediate prospect of building?—It was land of an agricultural character then, but that was about three years ago. It lay between where I live at Surbiton and Worcester Park, and the building now at Worcester Park is going on at such a rate that the application of sewage to the very land contemplated in that Act would now be objected to by anybody who owned it, as considering it fit for villa residences.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 5th July 1869.

PRESENT:

THE RIGHT HONOURABLE CHARLES BOWYER ADDERLEY, M.P., IN THE CHAIR.

THE EARL OF DUCIE.
THE RIGHT HON. LORD ROBERT MONTAGU, M.P.
THE RIGHT HON. RUSSELL GURNEY, M.P., Q.C.
SIR THOMAS WATSON, Bart., M.D., F.R.S.
LIEUT.-COLONEL EWART, C.B., R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P., F.R.S.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
ROBERT CHRISTISON, Esq., M.D., Pres. R.S.E.
WILLIAM STOKES, Esq., M.D., F.R.S.
FRANCIS THOMAS BIRCHAM, Esq.

(37.) ROBERT CHRISTISON, Esq., M.D., Pres. R.S.E., a member of the Commission, examined.

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5280. (*Chairman.*) You are professor of materia medica and formerly professor of medical jurisprudence in the University of Edinburgh, and you are also a member of this Commission?—Yes.

5281. You have had considerable practical experience, have you not, in the laws relating to the pollution of streams by manufactories?—Yes.

5282. You have also been frequently examined as an expert in trials at law?—Yes, in trials at law regarding nuisances.

5283. Will you state generally your opinion as to what should be done in the case of manufactories polluting streams injuriously?—I have had this experience; that during my lifetime two streams in the neighbourhood of Edinburgh have been rendered utterly useless for any other purpose but the purposes of the manufactories on their banks. I have seen also streams in other parts of Scotland gradually undergoing deterioration, and I see that unless something is done the principal streams in the country will in the end come to share the fate of the two streams in the neighbourhood of my own town.

5284. Do you think that the manufacturers as a body have taken all the means that they might adopt towards preventing this pollution?—By no means. Few have taken any means whatever for abating the nuisance, except upon compulsion.

5285. Do you think that there should be compulsion put upon them by law to take all practicable means of rendering their refuse innoxious?—Yes, I have formed a strong opinion upon that point, and upon the ground that I have never yet been engaged in any of those investigations where it did not turn out that when the manufacturers applied to the abatement of the nuisance the same skill which they had applied to the improvement of their manufactures, the nuisance was abated materially or altogether, and not only without any extra expense, but in general actually to their profit.

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5286. Can you give us any instances illustrating this opinion?—There is one in our immediate neighbourhood. A large distillery, from which a great quantity of refuse was thrown out into a small stream and carried into the water of Leith, which runs along the northern confines of the town, created a very great nuisance; and part of it was actually raked out of the little stream by a farmer and kept for sale for manure, creating a most abominable stench. Remonstrances were made and an action threatened, and I was asked to examine the works by both parties, both by the distiller and likewise by the prosecutor. I found that improvements had already been begun, and the result was that by separating the liquid part from the solid, the distiller stated to me himself that even at that early stage of his operations he saw that by selling the solid part to cow feeders at a distance from the town he should be able to pay the expense of the process.

5287. Was this a whiskey distillery?—Yes, a very great distillery indeed. I believe it is the greatest distillery in the world. Another instance was a very recent one, very well known in England to practical men, manufacturers, chemists, and engineers who take an interest in this subject, namely the case of the paper makers on the banks of the river Esk, on which there are various beautiful properties—the Duke of Buccleugh and Lord Melville and various others having properties upon the banks of the stream. When I was a lad that stream was a stream of perfectly pure water fit for any purpose whatsoever, and among other things it was a good trouting stream; but for some considerable number of years the stream has been utterly destroyed. It is so thick and turbid that if you were to put a sheet of white paper six inches under the surface you could not see it. I was employed both by the proprietors on the banks, and the paper makers about 27 years ago to make an examination of the works and of the stream; and I pointed out how the nuisance could be abated. Rules were laid down at that time, and they were faithfully observed, and for a time the nuisance was materially corrected; but upon the great increase of paper making after the penny postage was introduced, and still more upon the introduction of the process of making paper from Spanish grass, or Esparto, the nuisance became far beyond what those old regulations could possibly command. But I saw more recently how the nuisance could be most materially abated. I was asked to examine the works again two years ago with reference to a formidable action which for the first time was decidedly commenced against the manufacturers (because this action had been brewing for a number of years), and then I found that one manufacturer had actually introduced an important part of the process which I was prepared to recommend then, and he stated to me that the result was that he was about to make 400*l.* a year; not merely that he had something to bring against the cost of his mode of abating the nuisance, but that he would actually gain an additional profit of 400*l.* a year.

5288. In the instances which you have mentioned, was the pollution merely such as discoloured the stream, or was it absolutely poisonous?—It was positively pernicious; it destroyed every fish in the stream.

5289. And it would be noxious either to men or to animals drinking it?—I think it impossible that either men or animals could drink it with impunity, or could drink it at all.

5290. Will you tell us chemically what was the nature of the poison?—There was in the first instance a quantity of carbonate of soda, which was used for dissolving out the green colouring matter of the Esparto grass. Then there was the organic matter carried out in solution in the alkali. Then there was a certain quantity of waste chloride of lime thrown out; and further, there was the refuse of the washings of dirty rags, which are also used for paper making; and those together made the water not only turbid, but such as destroyed all the fishes. The organic matter carried out in large quantities from the lye which had been used to boil the Esparto grass, in warm weather soon decays, and creates at the present moment a very disagreeable odour all along the course of the stream; so disagreeable an odour that I do not think it is possible that any human being could drink it, and I doubt whether any animal would drink it, except under the dire pressure of necessity.

5291. Do you think, generally speaking, with regard to manufacturers of all kinds that the law might compel more stringently the abatement of such nuisances?—That is the result of my observation in the cases which have come under my own notice, and it is not likely that my opportunities have been peculiar in this matter. I should mention another instance which was the first that I encountered. I was asked to examine the bleaching works upon a small stream in Forfarshire, in a precisely similar condition. It was a stream with very beautiful properties upon it, and amongst the rest that of Mr. Erskine of Linlathan, who is well known in England. There I found that one of the manufacturers had adopted this process which 30 years afterwards was adopted by one of the Esk paper makers. He collected his lye after being used, evaporated it, burnt up the residue, got the carbonate of soda back again, and used it a second time for the same purpose. I forget what he stated was the profit, but he stated to me that he could do this and have a profit after paying the expenses of the process.

5292. Have you any suggestion to make to the Commission as to how the law might be made more operative?—That I am not prepared exactly to suggest, until I had some communication with a Scotch lawyer who could tell me within what limits I might make suggestions.

5293. Is it your impression that the law prohibits any nuisance sufficiently only that it is not sufficiently operative?—I think so far as I understand what has been stated by the lawyers in the cases to which I refer, and some others, that the law is sufficiently stringent if it could be enforced; but then it can only be enforced now under the costly method of a jury court trial.

5294. Do you think that the process should be facilitated, and also that information should be made more easily?—That is my opinion; I have not the least doubt that if the process of abating those nuisances was more simple there would be no want of information, because it is so much the interest of the proprietors on the banks of these streams to put a stop to them.

5295. You have paid great attention to the subject of the registry of deaths, have you not?—I have paid a good deal of attention to it; and I did so in the first instance as Professor of Medical Jurisprudence, under which in Edinburgh we comprise two branches, Forensic Medicine, and Hygiène. At that time I studied the subject carefully, but my attention has been turned to it practically during the last 22 years, in consequence of my being head physician of a large Insurance Company in Edinburgh, one of the largest now in this country, the Standard Insurance Company; and I have seen during the later part of my studies in this subject the inaccuracies of the register such as Dr. Farr mentioned.

5296. Do you think that the register should be made more accurate?—I think that it may be made more accurate; and my reason for saying so is, that in this insurance company there are special returns given of the causes of death, and generally an extract from the register is sent likewise. There is a letter which is filled up by the medical gentleman who attended the deceased certifying what was the cause of death, and the date of it; and I found that that cause was not infrequently very different from the cause which was entered in the register; but still more frequently I found that the cause was stated so vaguely that it could not be put under any head. I

always found, however, that I got a precise answer from the medical man when I wrote to him in the name of the company, that I was desirous of having more precise information. I should wish the registrars and more particularly the registrar-general in England to know, that by arranging some such communication with the medical returning officers, they could get the returns collected with great accuracy.

5297. Would you suggest any legislation for the purpose of making the register of the causes of disease more complete?—No; as far as I can see there is no occasion for any fresh law on the matter. It appears to me that the Registrar-General has ample power; but that he might have greater facility of carrying through the power with which he is vested by incurring a little more expense, such as that, for example, of communicating with medical men; which involves correspondence and would require extra expense.

5298. From your experience as physician of a great insurance company, should you confirm Dr. Farr's complaint of the loose returns that are received from the registrars?—Yes, certainly. I was present when Dr. Farr gave his evidence. He mentioned as an instance dropsy, which is not, properly speaking, a disease. It is a symptom of various diseases, and really gives little or no information as to the cause of death. It may arise from a diseased heart, diseased lungs, diseased kidneys, or diseased liver; and that is what we desire to know with a view to preventing disease; because I look upon the object of a mortality register to be the prevention of disease. It is not a matter in which medicine is concerned particularly except that it is through medicine that the information must be got; but the object is to benefit the public and to arrive at the causes of disease under various circumstances of life, and in that way to put the public in possession of information which at the present time they do not possess, with the view of maintaining health. I beg to observe that it is a common error to believe that what has been suggested on this subject latterly by medical men is for the advantage of medicine. No doubt it would be for the advantage of medicine, but the party that is far more concerned in the accuracy of the register is the public at large.

5299. How are the registrar's returns collected for the purposes of your insurance company?—They are collected by means of the letters that I mentioned. Besides the return from the registrar, there is a return from the medical officer of the company, who certifies the death.

5300. What suggestions have you to make as to the body which should be intrusted with the administration of the Sanitary Acts?—I have a strong opinion from what I have read of the evidence which has been brought before this Commission already, and also confirmed by my own experience, that the body who administers so important an Act as the Nuisance Act ought to be a specially appointed body.

5301. In what way should it be specially appointed?—It ought to be appointed in such a way that there should be a number of men of decided intelligence in the body. Referring more particularly to what may possibly be thought a popular way of vesting the powers under the Nuisance Act in the towns of Scotland, namely, town councils,—I would not advocate that, because in the first instance I do not think that the town councils in Scotland contain men of the intelligence required for administering so very important an Act as a Nuisance Act. Secondly, I think that there is a risk of the *vis inertiæ* of a town council obstructing the Act in consequence of their having friends, being tradesmen and manufacturers themselves, who are also tradesmen and manufacturers creating nuisances that should be put down. Partly from the influence of friendship, and still more from an unwillingness to displease the voters on whom their election depends, they will not carry through the Nuisance Act with the determination and impartiality that a body specially appointed would do. And I say so not upon general grounds only, but from what I have myself observed. The Smoke Nuisance Act is nominally in operation in Edinburgh, but really it is not. Since I was appointed a member of the Commission I have taken the trouble to look every now and then in the course of my drives through the town, and I see that the flues of manufactories smoke just as much as ever they did before the Nuisance Act was in existence. But at the same time I know for certain that 30 years ago smoke could be consumed completely and without any great expense, at great varieties of manufactories, so that there could be no great difficulty in consuming the smoke at every one. I find from one of my friends who is now attending the meetings of the Medical Council here that Glasgow is in exactly the same predicament. The Nuisance Act is nominally in existence there, but I can safely say, from what I have seen repeatedly in Glasgow, that you never would discover it. Of course in Glasgow the nuisance is a far greater one than it is in Edinburgh.

5302. Do you think that you could get a public body of greater intelligence and independence to enforce those laws upon the manufacturers?—Yes, I think so. I would not exclude the town council from being represented on that body, far from it. There are intelligent men amongst them who would go completely along with others, but then they form, I am afraid, the minority of our town councils. I should certainly like to see the town council represented in such a body, although they should not be the body itself.

5303. Do you think that such a superior body could be formed by election?—Not by a popular election.

5304. Have you considered how such a body could be formed?—It might be appointed by election from the various public bodies in Edinburgh, of whom there are many. There is a chamber of commerce there, and there are the different denominations of the law in Edinburgh, which are numerous, and there are the two colleges of surgeons and physicians. There could be no difficulty whatever in getting a representative body in Edinburgh that would discharge all the duties with the greatest energy.

5305. Do your last remarks apply equally to towns and rural districts?—They apply to all large towns such as Glasgow. Smaller towns of course would require to come under the counties.

5306. What do you think would be the best authority in the rural districts in Scotland?—There the elective body could be one of the public bodies now in existence. I mean that those bodies should be bodies for rural districts only. I presume that there would require to be a general board to give directions to all those local boards so that they should act upon the same principles; not that this board should dictate to them what is to be done, but that it might be a body of reference or possibly of appeal in case of difference of opinion. I presume that the government could scarcely institute any general system of this kind without having some central authority of one kind or another.

5307. What is the body in Scotland that corresponds to our boards of guardians in England?—As nearly as I can understand, it is the heritors of parishes.

5308. Would they be the body who according to the plan that you have just suggested, would either delegate or help to constitute the authority in rural districts for sanitary purposes?—I think so.

5309. You have stated cases in which local authorities have been negligent in administering the law relatng to the smoke nuisance, can you state also any instaince where there has been similar negligence with regard to drainage?—There is an instance in our own town to that effect also. Very lately there was an Act obtained for saving the town sewage which entered one of the streams that I spoke of, the water of Leith, from a great part of the new town of Edinburgh, and from a portion of the west end of the old town. It was done at a large expense, I think; as far as I recollect it was 70,000*l.*, and the expense was raised by

a rate upon those who were thus drained. Although the sewage and the general drainage from the west part of the old town was admitted into the great drain which carries away that sewage now into the sea, the open drain by which the west end of the town was drained towards the stream has been left open as before; so that the stream that drains the west end of the old town no longer pollutes the river; but there is a course of about three-quarters of a mile, in which this filthy stream is still quite open.

5310. Do you think, that the sort of boards which you have been suggesting for sanitary purposes could undertake the cleansing of the whole watershed of rivers and streams or would you have a separate body?—I see from the evidence that I have read which has been taken by this Commission that it would be very desirable for the particular purpose of preserving a stream clear that the commission in charge of it should be for the whole area of the river.

5311. You think that it might be kept distinct for that particular purpose, leaving the local sanitary functions to the boards that you have been suggesting?—I think so.

5312. (*Earl of Ducie.*) You have told us of instances in which the refuse of paper mills and distilleries have been successfully treated. Can you say whether it is possible to treat the refuse of other factories, such as cloth mills, cotton mills, and the like with equal success?—Of these I have had no personal experience, but I cannot see why the one should not be as easily treated as the other, because the paper mills appear to me to produce the greatest difficulties in the way of preventing pollution. I have always felt that, and I think that you will find that such is the general feeling amongst chemists and engineers who have been concerned with the like cases,—that the paper mills are the most difficult of all to keep in order.

5313. And therefore if paper mills can be so treated, all other factories being of a less hurtful type can naturaly be dealt with?—Yes, I think that that is a fair presumption, but I speak only positively with regard to those which have come under my notice.

5314. Are you aware that cloth mills send down an immense quantity of blue dye?—I suppose that the blue dye ought to be kept back, because the principal part of the blue dye that escapes unconsumed is in a solid condition.

5315. (*Lieut.-Col. Ewart.*) Have you met with any cases in the course of your experience of injury to the health of persons living on the banks of streams polluted by paper mills?—I cannot say. I have heard this alleged, but it is extremely difficult to get good evidence of such allegations. The investigation of the causes of ill-health and mortality is a much more difficult matter than is commonly supposed, and I would not attach much importance to any statement to the effect of health being injured. But there is one description of nuisance with which everyone is familiar, namely, the nuisance of the irritating gases, from the chimneys of alkali works, where muriatic acid gas used to be disengaged in such quantities, as utterly to destroy all the vegetation around. I have seen in the case of one of the great manufactories of that sort at Glasgow, the vegetation destroyed in the direction of the wind a mile distant from it, and if anyone gets into the atmosphere whilst this gas was being discharged he could not remain long in it—it would set him coughing as I have myself experienced even some distance from the manufactory. No one can suppose that any person habitually subject to such vapours would be likely to enjoy his health very well; but I am not prepared with any positive evidence that any one of those places is injurious to health. I do not think that we can enter into that question just now without getting into the mazes of scientific evidence. But I may mention one remarkable fact which is probably known to some of the members of the Commission, that certain meadows of great extent irrigated with town sewage in the immediate neighbourhood of Edinburgh, were at one time thought to be exceedingly detrimental to health; but I believe that the result of an action at law upon that subject was decidedly to prove that they are not injurious to health.

5316. Are those the Craigentinny meadows?—Yes, that they are not injurious to health. And I know that is the opinion of various medical friends of mine who practise at Leith, which is still nearer those meadows than Edinburgh, and who would have seen any people who were ill there; and they have all assured me that sickness is not particularly common there, and that people enjoy good health and live to a very advanced age notwithstanding the vapours from those meadows.

5317. Has the irrigation of those meadows been going on for a long time?—Yes, a long time, long before my recollection. They have been extended during that time, but I can recollect in my boyhood that they were very extensive.

5318. Do you think that there is any real difficulty in extending that system generally to all towns?—I do not think that there is any difficulty as far as injury to health goes, because it does not appear that town sewage when applied in that way is injurious. There is one curious fact which every one, as far as I know, has observed who has had experience of those irrigated meadows and which I think important of itself, namely that after the irrigation has been made, in a short time the disagreeable odour passes off, because growing vegetation, particularly grass growing at the great speed with which it grows in those meadows, seems to have the power of speedily destroying all the organic effluvia.

5319. (*Sir Thomas Watson.*) You mentioned that there were great defects in your experience in the registration of the causes of death. I would ask you whether the main object of registering death and its causes is not to arrive at some knowledge of the causes of disease?—Certainly.

5320. Should you think that any method could be devised for insuring an accurate registration of disease throughout the country?—That was made the subject of examination when Dr. Farr was before the Commission the other day while I was present, and it appeared to me at that time, and from what I know of our various public medical institutions in Scotland, that there would be no difficulty in getting adequate returns of sickness through means of them, and that they would join in the investigation cordially, and supply accurate information as far as they are concerned. And it further appears to me that although in this way you do not ascertain the total sickness of any part of the community, still you would get a fair representation of the sickness in that part of the community who are principally concerned in sanitary regulations, namely, the working classes. You would get a sufficient induction of facts, I think, to found accurate conclusions upon from those public institutions without going to private practitioners. I have no hope of getting any solid information from them, because you could get it only from a few. You would not get it generally, and in that way you would get partial information. But if you confined your information to what can be got from those great public institutions and hospitals and dispensaries, with the poor law hospitals among the rest, I think you would then have a large induction of facts upon which you could found excellent conclusions. And amongst others you would in this way necessarily arrive at the fact of any disease beginning to assume an epidemic form, whereas if you wait for the mortality returns, it may be a little too late to take measures to check the epidemic.

5321. Do not you think that such information derivable from public institutions might be obtained without any very great additional expense and perhaps without any expense at all to the ratepayers?—I think speaking from my own connexion with the physicians of the hospitals in Edinburgh, and with medical men generally throughout the country, that they would be glad to supply information as public

officers because they could do it with little trouble; since they would have the facts ready prepared at their hand.

5322. If it was the cause of any expense, do you not believe that to the community at large, the advantage arising from such returns would pecuniarily even more than recoup that expense?—I have such a persuasion of it, that at all events I should like to see the thing tried.

5323. (*Mr. Bircham.*) Did I rightly understand you that any large proportion of the old town of Edinburgh was in fact without a water supply?—There must be a great number of old houses in Edinburgh in which there is no water in the houses, but there are public wells where the water is constantly running, and where they can get the water. The town council have made great exertions to induce, and in some instances, I believe, to compel the proprietors of those houses to introduce water, but I am afraid that in very many cases they have not been successful. The difficulty is very great from the great height of the houses and the number of people who live in them.

5324. (*Mr. Richards.*) Are we to understand that your opinion is that there is no difficulty in the smoke being consumed in all manufactories?—I am not quite prepared to say that there is no difficulty because I think there may be a certain number of manufactories where a difficulty may exist; but from what I saw fully 30 years ago, and from what I have repeatedly learned since, I may safely say that I do not understand where the difficulty lies.

5325. Do you refer to smoke creating steam in boilers, or do you refer to smoke from manufactories?—I refer to smoke in every position. If the smoke comes from where a steam engine is at work there is no difficulty. In England I have seen it done in the simplest of all possible ways, by borrowing a small power from the engine, and shaking a hopper in which the coal was placed in small fragments. The hopper was supplied once a day and continuously dropped coal in small quantities and if that is done you are well aware that there is no smoke.

5326. Take the case of an ordinary reverberatory furnace with which I have no doubt you are familiar, in smelting operations, how would you in that case consume the smoke?—I am not an engineer. I paid a good deal of attention to that subject when I was young, but I am afraid I might go a little too far if I were to rest upon my juvenile information upon this matter; but I may add that I saw that also done beautifully and completely by Mr. James Nasmyth when he was a mere lad, in Edinburgh, by injecting a stream of steam a short way above the furnace, and the instant the steam was injected every atom of smoke vanished.

5327. Up to this time, has it not been found practically impossible to do it?—That I do not know.

5328. You do not know of its being done anywhere do you?—No; but it does not follow that it is not done because I do not know it. I should perhaps have stated in the first instance, that my principal information upon those points was derived a great many years ago when I occupied a different position from what I do now. I was then professor of what we may call State medicine, and my proper province was to be engaged in such studies; but for 37 years I have been in a totally different professorship where I am connected with curative rather than with sanitary measures. I have been in fact for a great many years a physician purely; still I have been compelled sometimes to take an interest in these matters, especially in the paper case, in consequence of having been concerned at an early period in investigating the matter of nuisance in the very stream which originally I was asked to examine into; but I have not kept up my information upon this matter to the extent which I should desire, in order to answer all your questions with confidence. I have however seen it done in so many ways, and heard of so many other ways which are all well spoken of, that I really do not see that there ought to be any great difficulty, if, as I say, manufacturers would apply to the difficulties in their way the skill and ingenuity which they apply to the advancement of their manufactures.

5329. Then do I understand that you wish to qualify the answer which you made to the chairman on one point, namely, that there is no difficulty in the consumption of smoke in all manufactories?—I still think there is no difficulty, or at least there is no difficulty which ought not to be overcome.

5330. And you make that answer applicable to reverberatory furnaces?—That is my present impression.

5331. Take the case of reverbatory furnaces used for calcining copper ore, and used for smelting copper ore, where you require an intense heat, how would you get rid of the black smoke?—Then of course, I reply, I am not sufficiently an engineer to answer the question.

5322. Then you would probably qualify your answer to that extent?—I would qualify my answer so far, that I do not know that the thing is actually done; but at the same time, from my general knowledge of the subject, I do not see why if there is a difficulty it should not be overcome.

5333. Do you mean overcome having regard to the ability to carry on that trade with profit?—Undoubtedly.

5334. Seeing that the most scientific ability is brought to bear upon smelting operations at the present time, do you not think that if it could be conducted profitably and satisfactorily, it would have been done?—I am certain that there is no indefeasible necessity that it should have been done merely because it may be done; because the same observation may be made with reference to the manufactories that I have examined. More particularly I say that there is not the least doubt that the paper-making nuisance may be greatly abated if not stopped entirely, but a great number of manufacturers do not do it.

5335. Do you refer to black smoke in your answer, or do you refer to the white vapour known as smoke, such as sulphurous acid gas?—I do not know that sulphurous acid gas is properly smoke. I have always understood that smoke properly means the black smoke that comes out of a chimney.

5336. But take a large smelting works in Wales where black smoke and sulphurous acid gas go up in one chimney:—I suppose every one now knows the process by which in the smelting furnaces in Wales a part of the noxious vapour is prevented from going up the chimney; the arsenical vapours are all stopped; and of course the same measure which is applied for absorbing the arsenical vapours must absorb a portion at all events of the sulphurous acid; and then comes the question, Can you not absorb the whole?—But as I tell you, I am not an engineer; at the same time I would ask you to recollect that the duty of an engineer is to deal with impossibilities.

5337. In answer to one member of the Commission, I understood you to say that you are not prepared to give an opinion that black smoke is injurious to health?—I am not prepared positively to say that it is injurious to health, but I think it must be. I should not like to live much in black smoke as far as my own health is concerned.

5338. Do you not think that the invisible gases might be much more injurious to health than the black smoke?—Certainly.

5339. Then it would be possible for what is known as an objection to the eye—the black smoke—to be consumed, and yet the much more poisonous gas spread over the population without their knowing it?—The poisonous gases diffuse themselves through the atmosphere and rapidly become diluted, so diluted that they will not produce injury, but that is not the case with black smoke. The black smoke, as we all know, tends to come down unless there is strong wind. If there is not much wind black smoke, from its weight, tends always to come down. But you probably know what is called the law of the diffusion of gases; that they

diffuse themselves throughout one another, and in that way, if the chimney is of sufficient height, those chemical vapours and acid vapours are so diluted before they reach the earth again that they may do no damage. They will do damage when so diluted that you cannot detect them by the sense of smell, although the sense of smell is a very delicate means of detecting them; but at the same time it is easy to see that they may be so diluted that they would not do any harm, besides not being discovered by the sense of smell. Take the case of sulphurous acid. When sulphurous acid is diluted, as I found by experiment long ago, with 20,000 parts of air, you cannot discover it by the odour, but it will destroy plants. When contained in a close vessel in proportion of $\frac{1}{20000}$th part of sulphurous acid to the air, you cannot discover it by the sense of smell; but plants in this air are nevertheless destroyed. Plants suffer more than animals. I do not know that in this degree of dilution it would be dangerous at all to man, possibly not; but we can easily understand that by still further dilution it becomes innocuous. In short, my belief is that these acid vapours, unless they are discharged in very large quantities, will by dilution in the atmosphere cease to be injurious, whereas in the case of black smoke you cannot get rid of it by the same means in consequence of its being heavy, and not soluble, so to speak, in air like this vapour; it gradually comes down to the earth.

5340. (*Dr. Acland.*) In the neighbourhood of Portobello you investigated the discharge of gases from the chimneys, did you not?—Yes, from one of those alkali works.

5341. Can you tell us what the result was upon the vegetation?—There was a wheat field, I remember, very near the works, and the wheat was in many places only about six inches high when it was in ear, and very irregular, like a very ill shaven beard, and the plants in an adjoining nursery were destroyed in many places; whenever the dominant wind changed round to the north-east the nurseryman found the next morning a great part of his plants destroyed.

5342. (*Mr. Richards.*) That would be from hydrochloric acid, I presume?—Yes, that would be from the hydrochloric acid; there was no possibility of its being sufficiently diluted, the garden and the field being so near the works.

5343. Assuming that it is conceded that black smoke does not in any material degree affect the public health (and I do not think that that is a great stretch of imagination) and that town councils considered that the advantages to a town are much greater with the smoke than by constant interference with manufacturers to insist upon its consumption, do you still think that the central authority ought to insist upon that town council taking measures to abate the black smoke?—Yes, because although a town council constituted as town councils in Scotland now are may represent the feelings and the interests of a certain class of the community, they certainly do not represent the feelings of another just as important class of the community, namely that class who most strenuously object to have smoke in their houses, and upon their dress, and upon their food at dinner, and various other ways; and therefore there is very good reason why a town council should not be allowed to follow their own inclination in that matter.

5344. Notwithstanding that they are of opinion that the material advantages countervail what the general public may call petty annoyances?—I have a supposed case put before me, but I deny that that case exists; I deny that it is for the interests of the members of the town council or for the interests of the community that smoke should be allowed to escape.

5345. My question was based upon that assumption?—But I deny the original proposition.

5346. You cannot conceive it possible that a town council should desire it?—Yes, I can conceive it quite possible that a town council should desire to take no movement in the matter, but I cannot conceive that the real ground for their not moving in the matter is to avoid injuring the manufactures of the town, seeing that according to my belief the smoke nuisance may be abated without the proprietors being put to any material expense, and that it would be even to their advantage in some cases.

5347. Then you assume now that that may be done, and that the smoke may be consumed to their advantage?—I think that I am entitled to assume that with reference to a great number of manufactures; I do not say it with reference to all.

5348. (*Dr. Stokes.*) Will you state whether you consider that the inhalation of a great quantity of carbon such as occurs with black smoke is injurious or not injurious?—I said that I think so, but I am not prepared to prove it. My own opinion is that it is most injurious.

5349. In the Lothians, where the mines are badly worked and badly ventilated, is there not a peculiar disease which affects the colliers owing to the mere inhalation of carbon?—No; it is a curious fact that the only workmen who are subject to that disease are not the men who work at the coal, but the men employed in driving drifts through the stone.

5350. Are not those passages through which they drive the trucks loaded with gunpowder smoke?—Yes, they are loaded with gunpowder smoke, but they are also loaded with the fine particles of stone through which the men are working, and I believe that that is the cause of the great injury which those men suffer; at all events there is no doubt of the sharp distinction which must be drawn between a pure collier who works at what they call the coal-wall and a collier who works at the stone-wall; these are the technical names; there is a difference between those workmen, one is a miner and the other is a coalminer. Those who work at the coal wall do not suffer from disease, but those who work at the stone wall are extremely apt to suffer from disease.

5351. Has it not been found when there has been an examination after death that the lungs are perfectly loaded with charcoal?—Yes, but this is such a case as has been suggested by Mr. Richards, that there are two vapours, one which is black smoke and another which is sulphurous acid. Here there is the black coal, so to speak, of the gunpowder in their lungs, but there is also the fine irritating dust of the stone.

5352. (*Mr. Richards.*) That is mechanical?—Yes, probably they are both mechanical, and the two are combined, and the belief is that the real cause of the offence here is the stone, and not the carbonaceous matter.

5353. Will you allow me to direct your attention to a locality where manufacturers of a particular class have been established for generations. Take the copper-smelting operation where, from the action of the sulphurous acid, the whole district has become denuded of vegetation, the result being, as you have said, that although vegetable life suffers animal life does not suffer. Would you in a district of that sort enforce the smoke regulation?—No, this is not smoke; this is something more than smoke; this is downright poison.

5354. One large chimney being used into which the various furnaces and steam boilers empty themselves?—As one who has paid a good deal of attention to all these questions, I would strongly advise the members of this Commission not to assume that it is positively impossible that even this sulphurous vapour should be put an end to—because your question pointed to that; and I do not think that, looking to what science has accomplished, and practice also in these days, it would be right for this Commission to assume that it is impossible even to put an end to those sulphurous vapours. I do not know that that has been done, but at the same time I do not think that we should assume that all the attempts to do it have been made that may be made.

5355. But assuming that that has not been proved capable, would you still give powers to make a

manufacturer do what is not proved capable?—No, certainly not, we can never ask a manufacturer to do that which is not practicable; but we have a right to ask a manufacturer who commits a nuisance to look at the matter and to take into consideration such advice as he can obtain from a sanitary body possessing powers by law to regulate sanitary matters and say what he can do; but to compel him to do so in the absence of a feasible mode of accomplishing this removal of the nuisance, of course, is out of the question.

5356. I gather your opinion to be that with respect to ordinary black smoke from a steam boiler it has been proved that it can be consumed, and it ought to be consumed?—Having seen so I cannot doubt it.

5357. But with respect to other smoke, such as sulphurous acid gas and other gases that are evolved until it is proved that they can be removed without detriment to the manufacturer, you would not interfere with them by legislative enactment?—You use the words "other acid vapour." You are aware that hydrochloric acid vapour can be condensed easily, and nitrous acid vapour too, which sometimes escapes in making sulphuric acid; that ought never to be.

5358. Then their interest would keep them from allowing it to escape?—That is what I complain of; that they sometimes require to have their own interests forced down their throats.

5359. Confining yourself to sulphurous acid gas you would not interfere?—I have said that I do not know how you can abate that nuisance at the present time, but I am not prepared to admit that it is impossible.

5360. (*Mr. Shaw.*) Is there any ground for the idea that some of those gases of an acid character may be of some value in counteracting the alkaline emanations of great cities, and thus may be positively rather salutary than not?—I am afraid that we are coming upon rather theoretical ground. The alkalies are acrid, and acid vapours are acrid, and if they are united together the acrimony of both is destroyed; and therefore we see upon theory that you may use one to neutralize the other; as you neutralize them in ordinary chemical operations you may do so in operations on a great scale theoretically, but I am not aware of their being thus used; the employment of alkalies for the purpose would be expensive.

5361. You mentioned, I think, that in the returns of death to insurance companies there was always a return from the medical man in attendance, and you sometimes find that return to vary from the Register of death?—Yes; sometimes I have known a case returned as diseased heart, in fact I have twice known this occur, when I myself knew that the cause of death was delirium tremens.

5362. And the medical man of the company probably returned delirium tremens?—It was registered as diseased heart, but returned to the assurance company as delirium tremens.

5363. Is not the great difference this, that the medical man in making a return to the insurance company is making a confidential communication in which it is the interest of parties that he should state the truth, and which will not be published; whereas, in the registration system he is making a report which necessarily must be of a public character, and therefore that is the reason probably why he withholds the truth where it would be of an obnoxious kind?—I am not aware at the present time that there is any express regulation by which a medical man is required to show the family what he returns as the cause of death to the registrar. It is not often that I have cause to make a return, being a consulting physician, because it is rather the duty of the general practitioner; but occasionally I have alone been in attendance on the occasion of death, and I then rather go to the registrar myself, and my return has never been seen by the family.

5364. But the registrar, being a public functionary living in the neighbourhood, there is nothing to prevent his talking about any such communication as is made to him?—No; any more than the various gentlemen connected with insurance companies. You may depend upon it they talk of those things.

5365. Do not you think there is this great difficulty in attempting to put the registration system on a par with what medical men would say to an insurance company, that they would be very much more careful in the one case than they would in the other lest they should give offence, and that that is the root of the difficulty?—It is very possible that some men act in that way, but all difficulties of the kind would be put an end to if there were some means of direct communication between the registrar and those who certify cases, so that the information would lie entirely between them and the registrar. I do not think we should be prepared to meet the case of a registrar violating his duty when the documents came before him which he must see would be injurious if they were made general use of. I think it is scarcely necessary for us to look to the risk of a registrar neglecting his duty and promulgating facts which he became cognizant of in discharging his official duty.

5366. Do you think as a practical question that a medical man would be as likely to tell the truth to a public man like a registrar for the purpose of collection and publication even where it involved something of a disreputable or obnoxious character as he would in a confidential communication to an insurance company, because that seems to me to be the difficulty?—There is no doubt there are medical men who would not have sufficient determination to do this duty.

5367. (*Mr. Richards.*) Would you be surprised to hear that in a large district where black smoke and sulphurous acid gas are not consumed the average deaths for the last 18 months has not exceeded 18 per 1,000?—I have heard of it before, and therefore it would not excite surprise, but certainly I was much surprised when I first heard the incident mentioned. The first thing that occurs to one when those surprising cases appear is a desire to look into the foundation for the statement.

5368. (*Mr. Powell.*) It is possible, not to say probable, that if the facts turned out to be such as have been suggested, there have been some extraordinary circumstances in the case which have accounted for the occurrence?—I have seen so much of statistics, and so much of the fallacy of statistics, that I say this case appeared to me so surprising that my first desire was to know what are the facts on which the statement is founded.

5369. When you answered the question of Lord Ducie, respecting the possibility of remedying the discharges from woollen and cotton manufactories, had you read the very valuable information on that subject which is contained in the Aire and Calder report?—Regarding the woollen manufactories, I know the facts to a certain extent. They show how certain nuisances produced by woollen manufactories, the escape of oily matter and so on, may be most materially reduced and to the advantage of the manufacturers.

5370. Is not it the general effect of that evidence, and of the report based upon the evidence, that new remedies are being continually devised, and that that which some years ago was discharged into the rivers and a source of great inconvenience, perhaps even an injury to health, has now become not injurious, but even a source of profit?—Quite so. At several points of my evidence I have said something much to that effect, and it is upon such ground that I am not prepared to admit of impossibility in the matter.

5371. You would expect that as chemical science advances, and as mechanical science makes progress, provided those who conduct manufactories are willing and anxious, there will be a very great diminution of the mischief arising from the discharge into the streams, or over the land, or into the atmosphere, of such refuse?—I think so.

5372. I presume you do not mean to represent to the Commission as your opinion, that no mischief arises from the diffusion of the noxious gases which

emanate from manufactories?—Not at all, it is a mere question of course of dilution. If such gases are not sufficiently diluted by a certain quantity of atmospheric air, according to the usual law of the diffusion of gases, they must be a nuisance; and accordingly even in those cases where but little injury is done at a moderate distance, you find injury done in the immediate proximity of the works.

5373. Do you not find in fact that a portion of the district is materially injured by the discharge from vitriol and other works?—Yes, certainly.

5374. You are probably aware that many medical practitioners in considerable towns are of opinion that injury to health does arise and in a considerable degree from what is usually called the smoke nuisance?—Yes, that is a very common idea.

5375. You do not appear yourself to attach much importance to the injury to health arising from black smoke?—I repeat that I do not know any positive facts that prove that black smoke, apart from other noxious substances along with it, is positively detrimental to health, in reasonable moderation. Of course if the quantity is large it is obvious that it cannot be inhaled, but while as I say I do not know any positive facts to show that mere black smoke in a moderate quantity is actually detrimental to the health while a nuisance nevertheless to comfort, still my own impression is that looking at the noxious principles in it it must be injurious; but I do not know any positive facts.

5376. But you do not mean to represent that you consider that smoke arising from a town full of manufactories, or in the neighbourhood of a great number of collieries is not injurious to health?—No, I do not mean to say that.

5377. With regard to Craigentinny meadows, do you find that any injury to the health of the immediate neighbourhood arises from the irrigation process which has been going on for many years in the Craigentinny meadows near Edinburgh?—I do not think so. The population in the immediate neighbourhood is not numerous, but amongst other populations there is a cavalry regiment which is always quartered close to the Craigentinny meadows.

5378. Are you aware whether the health of that cavalry regiment has been injured by the meadows?—No; I have communicated on various occasions with the surgeons of that regiment. I am generally acquainted with them when they come to the town, and I ask them after they have been there for some time whether they have observed any apparent injury, and they say no, that the barracks are healthy.

5379. How far are the barracks from the actual sewage works on the meadows?—Some parts are near—within much less than half a mile; I do not know the exact distance.

5380. Are there more than one or two good houses in the immediate neighbourhood of those meadows?—Yes, the house of Craigentinny itself is not far from them, and there are several houses in the neighhoodhood; but upon the whole the immediate neighbourhood is not a populous one.

5381. Does that circumstance arise from the irrigation works or from other causes?—I think it is principally from the irrigation occupying the space. It occupies the space which naturally might have been converted into villas by this time.

5382. But you have not found that there has been any inconvenience from the noxious vapours perceived by the senses?—I think that is the result of the whole of the inquiries that have taken place on two occasions. First, there was a threatening of an action, and then there was a positive action commenced, and on both occasions a good deal of evidence was given, (contradictory as usual); but the result was an impression upon the minds of the lawyers connected with the case, and likewise of medical men, that the Craigentinny irrigating meadows are not injurious to the health of those who live near them.

5383. Is Craigentinny house close to the meadows?—Very near.

5384. I find that under the Public Health Act (Scotland) of 1867, chapter 101, the local authority for carrying out the Act where there is no town council, and where there are no police commissioners or trustees, is the parochial board?—Yes.

5385. I presume that that is the authority which you described just now consisting of the heritors?—Yes; the parochial board consists of the clergyman of the parish and the heritors of the parish, and I think also of the church elders, but I am not quite sure of that.

5386. I was proceeding to ask you whether the board is a very large one, consisting of all the gentlemen whom you have described in general terms, and so corresponding to our vestry, or whether it is a representative board consisting of a certain number of men analogous to our board of guardians?—No; I do not think it is a representative board in the country districts.

5387. I observe a distinction of some importance between the removal of nuisances clause in the Sanitary Act, England, section 19, sub-section 3, and the Scotch Act, section 16, sub-section 8, in this respect, that the English Act forbids a fireplace or furnace which does not as far as practicable consume the smoke arising from the combustible matter used in such fireplace or furnace everywhere; but the Scotch regulation only applies to the cases where such use is found within the borough. Do you see any reason why boroughs ought to be defended from such inconveniences, and why the country which is not within boroughs should be exposed to them as is the case in Scotland under the section which I have stated?—I certainly see no reason.

5388. You recommended that the authority should be a body specially appointed, and you went on to say that it should be representative as you set forth. How would you appoint that body. Did you mean that each body that was represented was to elect its own representatives, or that the Government was to appoint different persons possessing the several qualifications?—I have not considered the question how such a board should be appointed, and if I were desired to answer it further than I have done I would like to have a little time to consider it, because I was not prepared for examination upon that particular matter—the appointment of the board. I should require to know a little more of our laws in Scotland, regarding which I did not understand that there would be any investigation by this Commission. I should like to know all the subject before I could descend into any details as to how a board for the administration of the Nuisances Act ought to be constructed, but I do not anticipate any difficulty. With regard to your question about the Government, I have no hesitation in saying that in the appointment of all public scientific and professional officers I have great reliance from long experience now upon the Crown as patron.

5389. I presume that in deciding what powers you would give to the government in the appointment of such a board, you would bear in mind that in a free country the government is itself the creature of public opinion, and that it cannot be expected to rise very much higher than the level of the opinion of the day?—Certainly.

5390. You used the expression "general board," when speaking of the authority which you appear to have in view as superintending in some manner the local authorities—had you in your mind a general board for Scotland, and probably in Scotland, or would you place Scotland for those purposes under the Home Office?—I think that that would depend very much upon the nature of the respective laws and boards of the country, because although there may be a separate board for carrying out the Nuisance Act, still there would be frequent reference to what is done by other existing boards, such as the poor law boards and the town councils. Therefore I am not exactly prepared to say where that general board should be. At the same time it is obvious that the Privy Council which are at present the governing board, so far as there is government in the matter, is

admirably suited for the purpose if they had time to undertake such a large and extensive duty.

5391. (*Lord R. Montagu.*) I think you said that you would make it compulsory upon all miners and manufacturers to use all practicable means not to pollute rivers?—I think so.

5392. Have you ever heard that a similar clause in the Salmon Fisheries Act has caused that Act to be nearly inoperative?—No, I have not heard so.

5393. I suppose that there would be great difficulty in the case of each manufactory or of each mine to say in the abstract what were the best practicable means?—The whole subject is surrounded with difficulties, but the difficulties which may arise are not likely to be greater than the difficulties which have arisen, even in my own limited experience. In that experience the difficulties seemed to be just as great then, but they have vanished with a careful consideration of the subject, and the ground upon which I am of opinion that the manufacturers should all be compelled to reduce the nuisance which they create as far as practicable, is that hitherto I have not found that the difficulty was one which could not be surmounted. I do not mean to say that the difficulty could always be surmounted.

5394. The question that I put to you had reference to this. Supposing that an Act were passed which made it compulsory on manufacturers not to pollute their rivers, out to use all practicable means, then when the Act was put in force and a case was tried in a court of law, how do you think that the lawyers could prove that all practicable means had been used, or that the means, which had been used, were the best practicable means?—There is one way. For example, we may take the papermaker's case here; there has been the commencement of a great action between the proprietors and the papermakers on the River Esk, and already one decision has been got in favour of the proprietors, namely, that a nuisance has been created; whether the proprietors go further forward in their action depends upon whether the papermakers abate the nuisance or show their desire by endeavouring to abate the nuisance. Now they are doing so; they are very slow about it, but they are doing it, and supposing they succeed in doing it, there could be no difficulty in our way afterwards in compelling all other paper manufacturers to do the same, because it could be at once pointed out by the authority entitled to put down nuisances: "There is the "way in which the thing is done, you can do it and "you can not only do it, but after you have done it "you will find that instead of involving you in ex-"pense it will be to your profit, and therefore you "must do it."

5395. Then the criterion which you would have of the best practicable means would be the manufacturer who had done the most to secure his own river from pollution?—I think so. I think in short you will find as in all other Acts that before the Act is thoroughly understood you must have a lawsuit to determine what the Act means, what power it gives, and what shall be accomplished under it.

5396. You speak of paper mills. I believe that 95 per cent. of the alkaline liquor can be removed in a very small bulk of water and the alkali then saved, while the general washing is only to remove the remaining 5 per cent. which can be done in a larger quantity of water?—But I believe that more than 95 per cent. may be removed, because there are processes for obtaining the remanent alkaline lye which manufacturers, I found, were not aware of.

5397. I believe that Mr. Cranstoun of Berwickshire has saved all those strong lyes, and so preserved the river from pollution, while he has found it a great source of gain?—I am glad to hear it for several reasons. I intended to have visited his works if I could have accomplished it before coming to London upon the present occasion, because I have heard a great deal about them. I have also a great regard for the river, which is one of the best trouting rivers in the south of Scotland, where I very often have angled at an earlier period; and that is one of the streams which I am afraid will gradually come to be utterly polluted, although it is too large at present to be injured by a single work. There is no doubt whatever that Mr. Cranstoun and every other paper manufacturer can keep out almost the whole of their lye and make use of it by the process which they are now introducing. You are aware that when the lye is drawn off as far as it will run off there is a certain part which remains mixed up with the Esparto, and the question is how are they to get possession of that. They did not see how they were to get rid of that. One manufacturer, however, erected an expensive hydraulic press, and he got hold of it, but there are other ways of working of a much simpler kind by which they can get the lye with very little dilution; in fact almost without dilution.

5398. I believe that the Devonshire paper makers have also entirely saved their rivers from pollution by their mills?—I have not heard of it.

5399. Therefore in the case of paper mills we might say that the best practicable means result in the absolute purity of the rivers?—As far as Esparto grass is concerned. It is remarkable that though the greatest nuisance has been created by Esparto grass, it is on investigation found that that is a nuisance which is most easily prevented, and that the nuisance arising from cotton rags is not so easily prevented, because they do not require so strong a lye, and it is not so much worth while therefore to concentrate and save the alkali. But I have no doubt they will find ways of working with less water. Only set them to exercise their ingenuity, and they will find ways of saving water, and in that way make it their interest to obtain the soda again by incineration.

5400. But in the previous case that I put to you, namely, that of the washing out of 95 per cent. of the alkaline liquor applied to paper made from rags, leaving only 5 per cent. to be washed out with a greater quantity of water, in that case the pollution would be at all events very slight if not absolutely preventable?—It would be slight, but if the lye used for washing rags is so strong a solution that it is worth their while to evaporate it and burn it, they may get more of it away than 95 per cent.

5401. Then our criterion of the best practicable means with regard to paper making is very near to perfection, if it be not absolute purity?—That is my own impression; it requires only a little practical experience.

5402. With regard to bleachworks, I believe the poison which there escapes is chlorine; is it not a fact that at Manchester in the mill of Sir Elkanah Armitage the refuse is run into a tank, a little more chlorine is added, and it is used over and over again, so that nothing runs into the river?—I do not know the fact, but chloride of lime is extensively used by paper makers, so that there is no reason why bleachers should not be able to do that which paper makers do.

5403. But in the case of bleaching I believe that although the workmen call it chloride of lime, they have long ceased to use chloride of lime, and it is only pure chlorine that is used?—Yes, I have understood so.

5404. So that there is nothing to prevent the liquor being run into a tank, and when more chlorine is added used over again, so that there will be no refuse?—No, there is no reason whatever.

5405. Therefore in the case of bleachworks also your criterion is the absolute purity of the river?—There is a salt found in those tanks, when chloride of lime is used, the solution of which I presume in the end must run off into the river; but I do not suppose that that salt would be injurious unless it was in large quantity. That is chloride of calcium; the one is called chloride of lime, and the other is called chloride of calcium.

5406. You have been asked with regard to blue dyes. I believe that when they dye with indigo the

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solution consists of indigo with sulphate of iron and sulphuric acid?—Yes.

5407. I believe that at the same mill of Sir Elkanah Armitage, and at other mills in Manchester, they use this blue dye six times over, till at last it is nearly colourless before they let it run into the river?—I understand that the system of repeated use is practised, but I do not know the minutiæ of the process.

5408. I believe there is nothing, chemically speaking, to prevent the saving of all those ingredients from the water by evaporation?—I should think not.

5409. You were also asked with regard to calico printing. I believe that the pollution of rivers in the case of calico printing is arsenious acid, that being used to fix the colours?—I was pretty well acquainted with that process at one time, but I am not so well acquainted with it now, therefore I can scarcely answer the question.

5410. If that is the case, I believe there is nothing to prevent its being entirely precipitated by running the liquor into a tank with old iron, or lime?—I suppose not.

5411. That would entirely save the river from pollution, would it not?—I should think so.

5412. Therefore, in that case your criterion would be absolute purity, would it not?—It appears so.

5413. With regard to vitriol or what are called chemical works and also with regard to tin works, the pollution which escapes is vitriol I believe?—Sulphuric acid.

5414. That is very easily prevented by percolation through ashes or through earth, is it not?—I should rather not answer those questions offhand, because I am not so fresh upon those subjects as I was at one time, for the reasons which I have already mentioned to the Commission. If my opinion is wanted with regard to those practical scientific details I could easily refresh my memory and be prepared to give the Commission a more confident opinion.

5415. With regard to copper mines, is it not very easy to extract all the copper from water by running it into a subsiding tank with old iron, and has not this been practised at the Consols mine, the resulting gain being 500*l.* a year?—It may be so.

5416. Does not lead in the water from lead mines subside of itself in an old tank, it not being in solution but only in suspension?—Yes; there is no solution of lead, it is only in suspension, and therefore it subsides of itself in a tank. The lead from a lead mine is not in a state capable of being dissolved, but from smelting works in the neighbourhood of a lead mine there may be soluble particles escaping, but all those are rapidly deposited again upon exposure to the air.

5417. I believe that with regard to coal, Lord Durham and Lord Vane have dug pits and allow the small particles of coal to subside in tanks, and then that coal dust makes very good fuel, while the water is pumped back to be used over again, so that in that case there is also absolute purity attained?—That being done, of course there must be.

5418. In all those cases where the rivers may be absolutely saved from pollution, would you be in favour of a compulsory law preventing any pollution whatever without any limitation or qualification?—That has been my opinion, because I have seen the pollution prevented in many instances, and I do not see why it should not be prevented in all were proper attention paid. I was not aware of many of the cases which you have just now mentioned, but they merely confirm the general opinion that I have given in the first instance.

5419. In every case where a nuisance is suffered to remain it is a loss to the manufacturer?—So it appears, at least so far as my own observation has gone.

5420. You said that no injury resulted from the Craigentinny meadows, but is it not a fact that the sewage is run there in open ditches through the meadows?—Entirely.

5421. And various matters hang about the edges of those rough ditches, do they not?—Yes.

5422. And the sewage is also run not over clay but over sand?—Yes; it is sandy soil in the first instance, but it becomes a much stiffer soil after a time.

5423. Professor Way discovered a curious property in clay, that clay abstracted from the water all its excreta?—Yes, I am aware of that.

5424. Therefore, if the Craigentinny meadows are not injurious, *à fortiori* sewage irrigation on clay, with proper conduits, would be still less injurious?—That is a fair induction.

5425. With regard to the local board for sanitary administration in rural districts in Scotland, you spoke of the heritors forming that board. Is it not a fact that the heritors are the proprietors of at least 100*l.* Scots under the Act of George III., I think it is?—Yes, that is a very small sum to make a proprietor; it cannot be much less than that, a pound Scots being 1*s.*

5426. As you require great intelligence for a sanitary board, you would not propose to reduce the qualification too low?—No, certainly not. But there are extremely few small heritors or proprietors in the rural districts of Scotland.

Mr. S. Clarke.

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(38.) Mr. Samuel Clarke examined.

5427. (*Chairman.*) You have been inspector of nuisances and sanitary inspector for the last 20 years at Norwich, have you not?—Yes, at Norwich; and at Blofield union, close to Norwich, for a portion of the time.

5428. Is the present system of local administration of the sanitary laws in that district satisfactory?—No.

5429. In what respects is the administration of the sanitary laws unsatisfactory with regard to Norwich and the union of Blofield?—In the constitution of the local authority. I will now speak of the Blofield union; the local authority at Blofield, and that would apply also to the city of Norwich, has endeavoured to take proceedings to carry out the Sanitary Act, and I was authorized by the guardians to proceed against a very large landed proprietor. This proprietor, I might say, was a member of the board of guardians, who had to appoint me, and I got an order of the magistrates for the abatement of a nuisance, and the gentleman afterwards appealed against it, and it went to the quarter sessions, and the quarter sessions quashed his appeal. Still he refused to do what was necessary to carry out the means of abating the nuisance. There was a very considerable expense incurred, counsel was engaged and brought down to take part in this appeal, and I had very great difficulty in obtaining the expenses incurred, for on one side of the question there was what I looked at as the sanitary part of the community, and on the other side was this gentleman, who was represented by a large number of his tenants on the board who were elected as guardians. By a very small majority the costs were ordered to be paid, but it was a very close division, so close that I felt that after that I could not carry out the duties of inspector of nuisances satisfactorily—so I resigned.

5430. What year was that?—I should think about five years ago.

5431. Was this before you were inspector of nuisances in Norwich or afterwards?—No; I was inspector of nuisances at the same time for Norwich; I was asked to take that appointment being on the borders of Norwich.

5432. Were you inspector at the same time in Norwich and the union of Blofield?—Yes.

5433. How many parishes were there in the two, taking them together, in the whole area of your inspection?—In Norwich there are 32 parishes; as

to Blofield I am not exactly certain of the number of parishes.

5434. Will you tell us what your salary was as inspector?—My salary for the Blofield hundred was 40*l.* a year. I had only to go there occasionally, and for the city of Norwich it was 150*l.*

5435. Have you got other business to attend to?—No, I had not. I am inspector of vaccination in the city of Norwich.

5436. Were you the sole inspector of the whole of this area, including Norwich and Blofield?—Yes, the sole inspector.

5437. What was the nature of this nuisance about which you have been speaking?—It was cottages without any privy accommodation, and a fever broke out in one house and some children died. They lived all in one room in a most dilapidated state. The landlord refused to build the necessary accommodations, but subsequently he did build them; but some considerable length of time elapsed before they were built, I should think 12 months.

5438. Had you occasion to inspect and report upon the bad condition of other houses besides this?—Yes.

5439. In several instances?—Yes, I had no instructions to do it, but I did report upon them and other cases in Blofield hundred.

5440. Was not it your duty to report without instructions whenever you were aware of the existence of a nuisance?—Yes, of course.

5441. What is the condition of the houses of the labouring class generally in that union?—I might say that I have had some small experience beyond that union. I was instructed to make an examination of the different homes of the agricultural labourers in the county of Norfolk, and my reports were printed and published, a portion of them in the Times newspaper, and all of them in a local paper, and all of them remained unchallenged.

5442. Was that report made officially by you as sanitary inspector?—No, it was not, it was to the local papers; but there were other letters to the Times.

5443. Is there sufficient power of promptly enforcing a proper water supply?—No, certainly not in the country villages.

5444. What power do you think there ought to be?—I think that there should be some power. Take for instance last summer, which was a very dry summer, when a great number of the cottagers had to depend upon getting water out of a ditch, and in that dry summer that water was discoloured and had all sorts of animalculæ in it.

5445. Do you think that the sanitary authority ought to have power to compel owners to sink wells?—Yes, I think it should have that power. It has no power now.

5446. Supposing the existing authorities had that power, do you think they would exercise it?—I do not think they would in some instances, that is, as to the country; and then with regard to the city, under the Public Health Act, the machinery there is too unwieldy to get an immediate supply, or at any rate a supply within a reasonable time. You must go to the town council first, then you must serve with notice under the corporate seal, then you must get an order from the town council for that, then you must wait some time till the town council meet again, and then you must get an order for the water to be laid on. Something like two months elapse when a water supply is required.

5447. Do you think there is both fault in the constitution of the authority and also in the powers given to them?—Yes, I think there is.

5448. In the first case, will you tell us what you think ought to be done in the way of amending the authorities themselves, both with regard to towns as in the town of Norwich, and with regard to country districts as in the union of Blofield?—I think that there should be some central power that would at any rate call upon the authorities to do their duty. I know that under the Act now, if the authorities make default, the police superintendent or the chief constable may step in; but in the district his appointment is just the same as mine, a very precarious one, because he may be dismissed if action is taken against him, at least I presume he might, or at any rate he would not get any advance of salary. In my experience I have summoned the mayor, I have summoned the magistrates, and I have summoned town council men, and I have existed up to the present time; but it is rather a bold step to take, and I think that there should be some authority certainly to call upon the local authorities to do their duty, and if their officers who are appointed do their duty they should be protected by some central power.

5449. Do I understand you that the council in Norwich and the board of guardians in Blofield would be sufficient authorities, provided there was a central authority in London to set them to work?—No, I do not think that they would be.

5450. Will you tell us what you do mean?—I would almost decline to answer that; all I know is the fact, and I had better confine myself to what are facts, and the facts are that they will not take action.

5451. You have not thought out any plan for improving either their constitution or their action?—No, I would rather decline answering such a question.

5452. Have you any suggestion to make as to the vaccination laws?—I think, indeed I know, that there is a very great prejudice with regard to vaccination. With reference first to the parish doctor, I would make a suggestion in this instance. I think that vaccination in all towns, or at any rate within the city of Norwich, should be left open for the parents to go to any medical practitioner that they may think proper. That would take away the sort of stamp of pauperism which they object to in going where vaccination is paid for by the parish. Then, again, they have a great dislike with regard to the lymph that is introduced; they do not know what children it has been taken from, and that is the principal objection.

5453. Have you any suggestion to make as to the registration system?—The registration with regard to vaccination, I fear, is defective, as I have found from experience. I have very often found that children have not been registered at all, therefore you cannot have a uniform system of vaccination carried out, because they do not get their children registered, and I am not aware of any law to enforce it, at any rate as far as I am concerned.

5454. Have you any further suggestion to make with regard to nursing the sick or providing hospitals?—Yes, I would like to say a word about that. I think that there is more danger in that, with regard to the spread of disease, than there is in anything I know. I have had practical experience. I have seen disease conveyed into the country from the city, and to many parts of the city, all through the want of proper nursing. Sometimes they have been nursed by a daughter, sometimes they have been nursed by a relation from a distance, and sometimes by a relative from another part; and I have found in many instances that they have taken the disease to the different villages, and death has ensued.

5455. What would you suggest upon that head?—I would suggest that there should be a proper system of nursing. It is true that very recently there has sprung up a society in Norwich originated by a few ladies to train nurses, but they are inadequate for the supply of those who require them when disease overtakes them.

5456. Confining your answers to public authorities, have you any suggestions with regard to nurses in hospitals or the treatment of the sick, in the way of suggesting further powers being given to public authorities?—I think that they should have a staff of nurses, and that they should be so isolated from the other parts of the town, not selected, as they have been occasionally, from paupers, and so on, and taking the disease home, as I have seen it, but that they should be properly trained for that particular purpose, and not treated as paupers.

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5457. (*Mr. Powell.*) Could you give the Commission the population and the area of the union of Blofield?—The population is 11,521; the area is 44,178 acres.

5458. (*Mr. Shaw.*) Have you ever known an instance in the county of Norfolk in which the guardians have instituted sanitary works?—Not in the county of Norfolk.

5459. (*Mr. Bircham.*) What has been going on in the Blofield union since you resigned? Is there an inspector of nuisances there now?—Yes, the relieving officer.

5460. Is there any activity in the correction of nuisances?—I am not aware of it. I have not interfered with it since I left.

5461. You said that you examined and went through the county at the instance of one of the newspapers, and reported; did you find that the boards of guardians generally had appointed nuisance inspectors?—I did not inquire into that, my inquiry was as to the state of the homes of the labourers.

5462. You did not inquire, and you cannot tell the Commission whether there is any activity throughout Norfolk on the part of boards of guardians?—I am not aware of any.

5463. In Norwich there is now a very good water supply, I believe?—Yes, very good indeed.

5464. Do waterclosets obtain generally through the city, or what is the proportion of the houses which have waterclosets to the houses which have not?—I think it is about 2,000 waterclosets, and about 80,000 inhabitants.

5465. How is the refuse of the city got rid of?—At present it is carried into the river by drains.

5466. How is it in the case of those houses which have no waterclosets?—They have what is called a common bin or ash pit.

5467. But that refuse does not pass into the river, does it?—No, it is carted away.

5468. So that a large proportion of the whole refuse of Norwich is carried away in carts?—Yes, the greater portion of it.

5469. In the city of Norwich, as distinguished from the county, there has been considerable activity in the repression of nuisances, has there not?—Yes, so far waterclosets were enforced at the commencement of my career as a sanitary officer, but they have been suspended on account of the complaint about the river, and large drainage works are now being carried out.

5470. Is it the intention there to have drainage works which will deliver the sewage apart from the river on to land for irrigation?—Yes.

5471. (*Sir Thomas Watson.*) You have said that there is some objection to vaccination arising from a notion that it might be imputed to persons applying that they were paupers; is it not open to all those who are not paupers to go to their own medical men?—Yes, it is so, but then it becomes a question of expense.

5472. So that they would go to the public vaccinator to save their pockets, if they were not afraid of being stamped as paupers?—That is so.

The witness withdrew.

(39.) The Right Honourable the Earl Fortescue examined.

Right Hon. Earl Fortescue.
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5473. (*Chairman.*) The Commission are aware that your lordship has taken a great interest in sanitary measures for a great number of years; but I think what you are good enough now to come to give us information about is chiefly with regard to some local affairs in your county, which will illustrate the working of those sanitary Acts in rural districts?—It is quite true that I have taken a great interest in sanitary affairs for a number of years, but the loss of one eye, and the permanent weakening of the other, has prevented my attending to them, or, indeed, most other business, for a long time.

5474. With regard to the South Molton union, in which there are two parishes, and in which circumstances have occurred illustrating the working of the sanitary Acts, will you tell us first, perhaps, whether the South Molton union is not a considerable sized union, South Molton itself being a borough, so that the sanitary authorities in South Molton, in the rest of the union are different?—That is so; it is a large union, and some of it very thinly inhabited; comprising 30 parishes, if I recollect rightly, with a small market town and borough, the borough boundaries extending over the whole parish, which I think comprises some 6,000 acres, and a great part of it is agricultural, or still wilder, wood, and a part of my own deer park is within it. The jurisdiction for sanitary matters, and for highways, is different within the union, though for poor-law administration it is identical.

5475. What would be the sanitary authority in the borough of South Molton?—The town council, with the mayor and corporation, is the local board under the Local Government Act.

5476. Whereas in the rest of the union the sanitary authority would be either the board of guardians for the purposes of the removal of nuisances, or the vestry in individual parishes for other sanitary functions?—Yes, exactly so. In one parish I may mention, the parish of Chulmleigh, the village of Chulmleigh being a pretty populous village, containing about 1,000 inhabitants, has established a sewer authority parochially, and is now engaged in carrying out sanitary works through its instrumentality.

5477. As the authorities differ, the rates also would differ for the same purposes, would they not, in South Molton, as compared with the rest of the union?—Yes, certainly.

5478. Under the Nuisances Removal Act of 1860, does not the 4th section make the poor-rate the fund on which the expenses of the nuisances removal would be charged?—Yes; perhaps it might be convenient to the Commission if I just stated what actually took place with regard to some sanitary works which the board of guardians, of which I have long had the honour of being chairman, thought it desirable to undertake.

5479. Are you referring to the two parishes of Bishop's Nympton and Witheridge, in the union of South Molton?—Yes.

5480. Did not the board of guardians direct sewers to be made in those two large villages?—An outbreak of cholera having taken place at Chulmleigh, and our attention being called to it, I met some of the guardians and went over some of the houses where there were the dead and the dying, and others lying ill in the houses, and great consternation prevailing; we desired our inspector of nuisances to report upon the sanitary condition of the villages generally without delay; that was in June 1866. He reported two villages, within a few miles of Chulmleigh, Witheridge and Bishop's Nympton, in the parishes so named, as particularly requiring some drainage works; so relying on some general assurances from the agent of the Bishop of Exeter, who was one of the chief proprietors of houses in the village of Bishop's Nympton, and believing that under the various complicated sanitary statutes we were not only intended, but had been constituted, by the legislature a local authority with sufficient legal powers and means to effect the sanitary works that were requisite, we ordered the works accordingly. After a few months they were so far advanced at Bishop's Nympton that the contractor asked for some money on account, and the board of guardians agreed to draw a cheque for 100*l.* on account for him, giving meanwhile directions for a special rate to be levied upon the property benefited. We ascertained that the rateable value of the houses to be benefited was 305*l.* 15*s.*; that we had no power to borrow for the purpose of executing the works, and that the rate which we could levy upon them, not exceeding 1*s.* in the pound, would take 12 years to repay the money.

Under these circumstances we did not proceed to levy that rate, but we desired the works to be carried no further than had been originally contracted for.

5481. Was not this the difficulty, that you had supposed that you were the local authority, but you found that you were not the sewer authority under the Sanitary Act?—Precisely.

5482. That the board of guardians were not the authority for making sewers, but the vestry?—Yes, exactly.

5483. And that you, the board of guardians, had been acting *ultra vires*?—Yes; the drainage works without the water supply which we had intended to accompany it, and without which the drainage works could hardly be considered beneficial, were completed to the limited extent of the first contract, and the contractor continued to ask us for money. The auditor disallowed the 100*l.* which had already been paid, and surcharged three of the guardians of whom I was one, who had signed the cheque for the money, in compliance with the unanimous resolution of the board. We three guardians, appealed to the Poor Law Board, stating the circumstances of the case, and we received an order remitting the disallowance.

5484. From this rather troublesome experience which you have gained, what conclusion have you come to in your own mind as to a better system of local authority in villages like Bishop's Nympton, where the Local Government Act has not been adopted?—My own impression is that on the whole the board of guardians in such places ought to be the local authority and the sewer authority, and they ought to have power to borrow on the security of the rates for repaying the principal and interest on the same system as a drainage loan, in the course of from 25 to 30 years.

5485. Do you think that a parish is too small an area, and a vestry too small a body, either to raise the funds for the necessary works, or to have a sufficiently large public spirit to be likely to do them?—I am very strongly of that opinion. I do not say in large and populous villages that it is necessarily so, but in a great proportion of the rural villages in the country it is so. I object myself very much to the great multiplication of boards and authorities. In the rural districts generally there are only a certain number of men to be found of the requisite ability and public spirit to undertake public duties, and the amount of work imposed upon them by constituting a great variety of bodies is very much increased. My own highway board and board of guardians comprise a great many of the same individuals, and meet on the same day, but their work, if they were one and the same body, and dealt with the same subjects, would be very much simplified. Every now and then communications pass from one body to the other, and questions of jurisdiction, particularly with reference to sanitary matters, arise, which I think would be far more advantageously and simply disposed of if one body only was charged with as much administration as possible within the same area.

5486. In selecting highway boards, do you mean boards under the recent Highway Act?—We have a board under the recent Highway Act, and if that applies to highways I contend that it applies much more strongly to sanitary matters, which bear so directly upon the increase of pauperism, and the charges for maintenance and sickness.

5487. Supposing that the boards of guardians were made the local authorities for all local purposes in rural districts, do you think that they ought to be specially elected with that view, or that the board of guardians elected for poor-law purposes, as it is now, should have those duties imposed upon them?—My own impression is, that they would be elected with that view if it was known that the regulation of sanitary matters came under their jurisdiction within the union; but, as I said before, practically the number of men able and willing to undertake public duties with advantage to the community in a thinly inhabited rural district is limited.

5488. Supposing the board of guardians is the local authority for the whole union, where it directed such sewerage works as you have just been alluding to in the case of Bishop's Nympton and Witheridge, upon whom should the charge be made for the works; should it be upon those who are benefited by the works, or should it be a parochial rate?—My own impression is that it should be upon the property benefited, but recovered from the occupier in very small sums. Supposing always the requisite amount of money to be expended with tolerable judgment, the interest with a sinking fund for the repayment of principal and interest in the course of 30 years would never exceed 10*s.* or 12*s.* a year at the most, and that would not be such an increase to the rent, or such a burthen to the owner as to render such a course undesirable or unfair.

5489. Would there not be some difficulty in saying who the owners were whose property was benefited by such works, for instance, as sewage works?—The Act of Parliament speaks of the owners of houses using such sewage works as are benefited by them. I do not apprehend that if it was made primarily recoverable from the occupier in some weekly or quarterly or half-yearly sums, the difficulty as to the technical legal definition of the word "owner" would practically arise.

5490. You alluded just now to the power of borrowing money; do you think that those powers as they have been altered by recent Acts are still too limited, or would you suggest any alteration in the existing state of the law, empowering the local authorities to borrow money for public works?—I am sorry to say my eyesight has prevented my keeping up my knowledge of the statute book, or books on Acts of Parliament, as fully as I used, especially with regard to sanitary matters, but I am confident that the guardians had not the requisite powers at the time when we undertook those works; and I think it is very desirable that if they are charged with sanitary duties, they should have the powers of borrowing the requisite amount to enable them to discharge those duties.

5491. Do you think there would be no danger of overcharging your security by borrowing too much?—It is quite possible that abuses might occasionally occur. But it must be remembered that every facility for use is a facility for abuse, and every check upon abuse is a check upon use; and in all legislation the difficult problem to be solved is to reconcile the maximum of check to abuse with the minimum of impediment to use.

5492. You think that those local authorities are more likely to want a stimulus to spend such money as ought to be spent, than a check upon overspending?—I should think so, and I should have more confidence in boards of guardians generally than I should have in parochial authorities. I am speaking of course now of rural districts.

5493. Have you anything further to say with regard to the cases that you have alluded to?—The contractor having pressed for the balance due to him, three of the guardians, of whom I was one, signed a cheque for the amount, inasmuch as he would have the power of suing us, having received regular orders from the board of guardians to execute the works; and the Poor Law Board, for the same reason which induced them to remit the disallowance of the 100*l.* which had been paid on account, remitted the disallowance of the remaining 83*l.* Then the question arose as to what fund this 183*l.* should be charged to. It had been charged to the parish, and the auditor did not transfer it to the common fund of the union. The Poor Law Board then issued an order that it should be transferred to the common fund of the union, but the guardians by a majority refused to comply with the order. The auditor did not transfer it himself, and at present the question rests in a most unsatisfactory position, the parish having a positive order under the seal of the Poor Law Commissioners in their favour, and the guardians declining to comply with it. The

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Poor Law Board decline to go to law with the union to enforce their order, and the question remains whether the parish will take the whole matter into the Court of Queen's Bench, probably at an expense several times greater than that of the sum disputed. I mention that as an illustration of the hopeless state of confusion into which our present legislation has brought us.

5494. (*Lieut.-Col. Ewart.*) It has been mentioned by some of the witnesses that the rural police have been, and may be, employed with advantage as inspectors in the country parishes; what is your opinion upon that point?—We are so much of that opinion that one of the superintendents of the county constabulary is our inspector. South Molton being a borough town has its own staff of, I think, one policeman under an independent jurisdiction; but in that very union the inspector of nuisances, by whose reports we were guided in those two cases, was one of the officers of the county constabulary. I am strongly of opinion that those officers may generally be so employed with very great advantage.

5495. (*Mr. Bircham.*) Is the highway district conterminous with your poor-law union?—No; it is conterminous with one part of the magisterial division.

5496. Does there seem any good reason why highway boards should not be made in their functions conterminous with poor-law unions?—I think it is a very great misfortune that they cannot be without infringing on the principle of county administration. The first Poor Law Commissioners I think most unfortunately established their unions without the slightest regard to county boundaries. A part of my own union of South Molton is in the county of Somerset, that is to say, what was formerly Exmoor Forest is comprised in it.

5497. Are not those exceptional cases?—I only wish they were exceptional cases. Devonshire is a very large county, and of course there are a number of unions comprising no parishes except those within the county, but I know, from my experience while secretary of the Poor Law Board, that a very large number of unions transgressed the county boundaries.

5498. There would seem to be no difficulty, and no reason, except in such cases as your lordship has pointed out, why the highway boards should not be brought up to the poor-law unions?—I think it most desirable that they should be, provided always that it could be done consistently with the county jurisdiction over the highways within its boundaries. I attach very great value to county administration.

5499. At all events it appears very necessary, does it not, that the sewer authority, and that the authority which executes structural works in parishes, should be the same authority as has jurisdiction over the highways?—I should say that it would be very desirable. At present there is a constant danger of the highway boards and the boards of guardians coming to a misunderstanding as to the limit of their duties. I happen to be chairman of both, and I have had more than once to smooth and arrange matters though a considerable number of guardians are waywardens, and therefore of waywardens are guardians.

5500. However, I take your opinion to be that it would be very desirable that those boards should be merged as far as possible in one?—I have always held that opinion most strongly, and the difficulty which I see in it is considerably less now that the building charges for workhouses are nearly paid off; but there would still be great opposition, now that we have union chargeability, something like the opposition that we should have had some time ago to the transfer of a parish on account of the county boundaries from one union where the annual charge for the workhouse building debt happened to be lower to another where it happened to be higher.

5501. Have you considered whether it would be fairer that the health expenditure of a district should be paid out of the common fund, as in the case of poor-law unions, or that it should be cast back upon the parish in which the expense arises, as is more the case in highway boards?—My own impression is very strongly that wherever the particular property benefited is not made to pay the payment should be extended over the union. Now that we have union chargeability, the cost of pauperism and the cost of disease and of widowhood and orphanage entailed by defective sanitary arrangements is imposed upon the whole union, and not upon the parish in which the cases arose.

5502. But in the case of highways the expense gets more localized, does it not, and brought back to the parish in which it has arisen?—Yes, and that works most unfairly. In many instances communications which hardly benefit the parish at all, but which are of great value with regard to the general communications of a district, are charged solely to that particular parish.

5503. As regards sanitary matters, if I follow you aright, you would say, fix the particular property which is benefited if you can; but if you cannot fix the property, then let it go on the principle of union chargeability?—Yes, that is my impression; and further, that in some places the fairest way of dealing with the charge would be to put a certain proportion of it on a particular property or properties, and another part in consideration of the public benefit on the larger fund, that is to say, on the union.

5504. In your opinion is the officer or inspector of nuisances an active officer?—Yes, he is a very diligent officer, and has been of great use.

5505. What is his remuneration?—30*l.* per annum.

5506. Throughout your county is it the rule, or the exception, that there is an active inspection of nuisances?—I cannot speak positively about that, but I know that generally through the country a very different tone is taken by the farmers generally about the evil of nuisances, and the desirableness of removing the sources of disease.

5507. Do you attribute that rather to a growing intelligence on the subject?—I think I should attribute it to a growing intelligence, and to the seeds which have been scattered broadcast in the shape of sanitary information by official documents, by benevolent persons, and by associations, having a certain number of them taken root and grown.

5508. Is it or not the case that there is a great indisposition to spend money on the part of the representatives of parishes who come to form boards of guardians?—There is a very great reluctance to spend money, certainly, but I think a diminishing one where they see that a real benefit arises from the expenditure. I can speak to the fact of the board of guardians of South Molton having years ago on the motion, not of myself, or of my father, or of a magistrate, but of an independent guardian, established a training garden for the school boys, and a separate laundry for the school girls in the workhouse, to be taught to work, and in both cases at some present cost to the union, with a view to the improvement of the children and their welfare hereafter.

5509. Have you in your own union called upon the medical officers to report under the Nuisance Act of 1860 from time to time, as the sanitary officers of the union?—We have had reports from the medical officers, but whether as the result of a distinct enactment, or because we are generally speaking on good terms with our medical officers, and readily get information from them, I can hardly say.

5510. You do not recollect whether there has been a system of requiring regular reports from the medical officers?—No, except when there was any particular prevalent epidemic I do not think there has been.

5511. Would your experience lead you to think that the boards of guardians would be brought into more active duty by any external county pressure, or on the representations of inspectors making circuits through the country?—My own impression is, and has long been, and every day confirms it more and more, that it is a great misfortune that the board of guardians have no superior local administration dealing with the business which they have to transact

between them and the Poor Law Board in London. I wish very much to see county administration extended as far as possible, as something intermediate between the central government superintendence in London and merely local action in the different unions or highway districts, or small market towns or populous village administrations, and the sewer authorities.

5512. You think that some external action upon the local authority would be salutary, but there had better be something intermediate, in the nature of a county board, between them and the central authority in London?—That would be my impression, and my conviction is, that the interference of a county board, consisting mainly of well-known county persons, would be received in a much more friendly spirit than the interference of an inspector sent down from London sometimes is.

5513. And it would not lose in authority?—I think, far from losing in authority it would enjoy local influence as well as legal authority.

5514. (*Mr. Powell.*) Could you favour the Commission with your judgment as to the constitution of the county boards which you have just mentioned?—I can hardly say that I have thought the matter out at all, but I have a very strong impression that when we have county financial boards, they might very reasonably deal with and have some voice in the superintendence of county poor law administration as well as highway administration and financial administration.

5515. I believe it is admitted that if you place under the county board the country districts, you would exempt from the jurisdiction of that board urban communities, whether under local boards or under private Acts. Do you think that if the urban communities were exempted from the jurisdiction of this county board, and placed in direct communication with the Home Office, there would be any feeling of jealousy on the part of the rural districts on being placed under the county board?—No, I do not think there would be any. I must remark that I think one of the greatest misfortunes in Devonshire is having a number of very small municipal boroughs, and I may add having one or two large towns which are not municipalities, and do not seem willing to adopt the Act, and to petition for a charter of incorporation.

5516. Then you would bring under the authorities of the county board the small places under local boards?—I should like to see them brought under the authority of the county board. I look upon such places as Torrington and South Molton, and small towns with 2,000 or 3,000 inhabitants, situated in the middle of pretty large rural parishes, as a great impediment to the good administration of the highways and of sanitary matters, and generally as very undesirable. I think that, if one may say so, such a caricature of municipal government tends to bring discredit on municipal government where it is most desirable, and to discourage towns from seeking charters and obtaining them, as a matter of course, when really their population forms a separate and distinct community from the rural population around them. I would instance particularly Torquay; I do not think that the local Acts at all fulfil the purpose of a regular municipal constitution, with its own well-defined area, taking it out of the county for police purposes and other purposes.

5517. Assuming that it be found necessary to exempt certain great communities from the authority of the county board, do you think that there would be a feeling of dissatisfaction on the part of the country communities in being subjected to a county board, the difference between the two being likely to convey the impression, rightly or wrongly, that there was some inferior capacity on the part of those country districts to manage their own affairs?—No; I do not apprehend that there would be, because upon the county financial boards, of which I hope the composition will be very largely elective, they would feel that they were reasonably represented, and I do believe that there is a very strong county feeling still existing in England.

5518. You have spoken in a favourable sense of the activity of the sanitary authorities. I collect from that answer that you think that considerable improvements have been made of late years in the sanitary condition of the rural districts?—I think a very great deal of improvement, as is shown by the diminished mortality.

5519. Do you find that there are many cases of this kind where you have water either in ponds or in ditches to which sewerage matter finds access, and which consequently becomes more or less putrid and injurious to health?—There are a certain number of ditches, and it was to remedy the foulness of a ditch running along the village of Bishop's Nympton that we went to the expense of putting a sewer there; but in general the rainfall is so great in Devonshire, and there is such a great abundance of fresh running water, that I do not think the fouling of drinking water, except in the case of wells near cesspools, is so great a cause of mischief as I know it to be in several other counties where the rainfall is less and where brooks are scarcer.

5520. The water to which I referred was not drinking water, but other water the putrid emanations from which might be a source of disease?—There again the system of irrigation long practised in Devonshire, on almost every farm in the county, removes a great deal of the mischief, because the foul water is suffered to run upon the fields, and what would otherwise make fevers is rapidly turned into food.

5521. What remark should you make as to the condition of the dwellings of the working classes in your district?—There is a great deal that admits of improvement, but in two respects they are, I think, more happily circumstanced than in some other parts of England; the cottages are not generally very small, the number of cubic feet is not so very small, because the old cottages were built very largely of cob, which is a cheap material, and therefore the dimensions were not so much restricted; and the population is not so much collected in villages in Devonshire as in many other counties. There are a great number of cottages in pairs, or even a certain number of single ones scattered about the country, or collected in very small hamlets.

5522. Are the floors well elevated, so as not to be damp?—In many cases in the old houses they are not elevated, and the people certainly suffer from damp in many cases.

5523. Are the walls and roofs tolerably strong, so as to exclude both wet and cold?—I think they generally exclude wet and cold pretty well.

5524. Then as to the remaining sanitary condition of a working man's dwelling, namely the drainage and out-offices, do you consider that that is satisfactory?—No; I should not say that it was satisfactory. But when I contrast the worst cottages that I know with what I have seen in the course of my explorations of the sanitary condition of towns, they are most fortunate; for I know no cottage without at least one bedroom and a sitting room, and the great majority have two, and a considerable number three, whereas in the towns single rooms bear very large proportion to double rooms for the accommodation of entire families.

5525. As regards out-offices, are they in a tolerably satisfactory state?—They are greatly improved of late years, but the want of out offices is much less felt where cottages are detached and standing in their gardens than they are in towns or large villages, where the emanations from any dirt would be concentrated by proximity, and where decency would be offended far more than in the case of detached or all but detached dwellings.

5526. I presume there are many cottages which have no access to privy accommodation?—There are a good many without in Devonshire, and it is very often

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inadequate; but for the reason I have given that is not so injurious to health or to morality, where the cottages, as I have said, stand detached with remarkably high banks by way of hedges; banks surmounted by a hedge, instead of the low hedges which one finds in many parts of the country.

5527. Do you find that the new cottages which are springing up with great rapidity, replacing the old, are more satisfactory buildings?—I think decidedly so; but there has been a great conversion of double cottages into single ones, or of small farmhouses into cottages, and on the whole the statistics of the registrar general show that the public health is improving very much in the rural districts. The emigration from the rural districts to towns, and across the Atlantic, and to foreign countries, is considerable, and that chiefly takes place at the age of greatest health and vigour, after the age of childhood has passed, which is especially subject to disease, and before old age has come on, which is also naturally subject to disease, and death before the lapse of many years. But in spite of that, the per-centage of mortality, and therefore I infer of illness, has been steadily diminishing in Devonshire.

5528. Do the cottages in your district belong to the landowners, or do many of them belong to private speculators who have some little cottage property?—There are instances of all kinds, a certain number of small freeholders live in Devonshire, and then there are some extensive properties where a certain number of cottages have been run up by speculators.

5529. Are those cases numerous where speculators build a lot of cottages?—I do not know that I should say that they are very numerous, because on the whole the population of the rural districts in Devonshire is diminishing.

5530. Still the property of persons whose possessions consist of cottage property is considerable, and the amount of accommodation is considerable?—In the town of South Molton I should say it was; I know very little about it elsewhere, I do not, however, think it is so.

5531. Perhaps they constitute a larger proportion than the cottages belonging to the landed proprietors of the county?—If you include the freeholders or small leaseholders, but then I do not call those speculators in building.

5531*a*. (*Chairman.*) Have you any other observation to make?—As I have been questioned upon the authorities most desirable to be entrusted with local administration as regards sanitary matters, I should wish to add to my evidence that I have long, like my late father, advocated giving to representatives elected by the ratepayers some voice in the management of the county finances. I therefore hail with pleasure the recognition of the principle implied in the bill recently brought in by the Government, and in its reception by the House of Commons and by the country. I think, however, that the magistrates, though all *ex hypothesi* landowners, ought not to be considered therefore the fittest representatives even of the landowning interest in the county as a whole, much less of the different interests of the landowners in different parts of the same county. For their numbers notoriously bear very different proportions to the amount of land in different parts of the same county, and it would seem a great mistake both in justice and policy to leave unrepresented on the county financial boards, except as units in the large mass of ratepayers, the whole body of yeomen or small landowners engaged in farming, and therefore capable of understanding the wants and sympathizing with the feelings to a certain degree both of the rent-receiving landlords and the rent-paying tenant farmers. I think the landowners' representatives on the county financial boards should, if not all, at least half of them be elected by the freeholders of the county on some plan or other, (say giving each freeholder one vote in each separate parish where he has a freehold,) thus leaving at most half of these representatives to be elected by the magistrates out of their own body. I should wish also to call attention to the deficiency in the representation of the ground landlords in corporate towns, whose interests are very distinct from those of the ratepayers for the time being, alone now represented in the municipalities, and are really more identified with those of the still more temporary and utterly unrepresented lodgers. The ratepayer seeks above all to keep down the rates for the year, the efficiency of the works to be done being to him a matter of secondary importance, and their permanence quite immaterial. Whereas the interest of the ground landlord is to have the works well and durably executed, in order permanently to improve the condition and character of the neighbourhood, and therefore the value of his property; and in this respect his interest practically coincides with that of the lodger. My opinion has long been that the ratepayers in our towns are overtaxed and over-represented, that the ground landlords ought to be duly represented in our municipalities, and that where the cost of permanent works is defrayed out of the rates of the year, they should be called upon for a separate contribution towards it; but that a much larger proportion of such works ought to be executed on loan with a sinking fund, on the same principle as the land drainage works with Government loans, and that they should be more generally divided into general, districts, and special works, and paid for by distinct general, district, and special rates accordingly. My own opinion, only confirmed by recent experience, has long been that local authorities may safely be trusted with the planning and execution of works defrayed out of rates levied within the year, and even in the case of small sums of money partly raised by loan or by the sale of corporate property, not without some appeal, however, in these to some central authority, on the appellants giving security for defraying the cost of the requisite inquiry, should they prove in the wrong. But in all cases of larger sums raised in either of these ways for works, I consider it absolutely necessary, for the protection of posterity and of minorities, from the lasting burdens consequent on ignorance or jobbery on the part of those who happen to constitute the local authority for the time being, that, not only the destination of the money so raised, but also the plans and estimates of the works proposed, should be submitted for the sanction, and the works themselves to the inspection and approval of some competent central authority, such as the Board of Health used to be during the 10 years from 1848 to 1858, when it was entrusted by Parliament with such powers. That board, indeed, in its earnest zeal for economy and efficiency in local works may perhaps have somewhat too freely vetoed or altered plans falling a little short (and only a little) of its own high standard, and may thus have contributed to swell the clamour against all central control which led Parliament after those 10 years to remove it and practically abolish the board. But self-satisfied ignorance, and above all vigilant self-interest would in any case have been sure energetically to raise a cry against any restraint however reasonable, and to appeal to that love of independent local self-government, which is so valuable a characteristic of Englishmen. My apprehensions at the time of the inevitable consequences of the removal of all such restraint I have since found amply verified. I have known an engineer without experience in such matters, appointed to plan and conduct permanent works necessarily costing several times the amount of the annual rates of the town, but in consequence of this ignorance and inexperience run up to a much heavier sum, thus imposing permanently an unnecessarily heavy burden upon the inhabitants; and I have reason to believe this case to be far from singular. But in truth not only is some competent central authority, with powers of inspection and audit as well as veto where money is to be raised, desirable for the protection of posterity and of minorities liable to permanent injustice at the hands of a temporary majority, it is also most desirable for the collection and diffusion of

information about a class of works in which the advance of science and the accumulation of experience must ensure constant improvement in efficiency and economy. Without some such organization each place is liable to a great extent to have to buy its own experience for itself, without either deriving or imparting the benefit it ought to and from others, whereas a competent central authority with adequate powers would be constantly collecting, digesting, and circulating information from each to each for the benefit of all.

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The witness withdrew.

(40.) Mr. Thomas Thurlow examined.

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5532. (*Chairman.*) Are you chairman of the local authority at Saxmundham?—Yes.

5533. Is that the vestry?—Yes, it is the vestry.

5534. Are you chairman of the committee of the vestry?—Yes, chairman of the committee appointed by the vestry.

5535. Where is Saxmundham?—In Suffolk.

5536. What is its population?—A little over 1,200.

5537. What is the acreage?—1,100a. 3r. 30p.

5538. Can you tell us the rateable value?—4,794*l.*

5539. Can you tell us what the rates in the pound in any year within your recollection have amounted to?—3*s.* 6*d.*

5540. Does that include the poor rates?—It includes the poor rate, the surveyor's rate, the church rate, and in fact all the rates for the year.

5541. What is your business?—I am a sculptor.

5542. The Sanitary Acts apply to Saxmundham, do they not?—Yes, they apply to Saxmundham in as far as they give the vestry, which is the authority, power to act, and, as we believe, it is not necessary for a rural town like Saxmundham to appoint a permanent board because of the expense thereby entailed.

5543. What do you mean by the expense thereby entailed?—That is, by adopting the Local Government Act, by having a permanent board for the purpose of carrying out drainage works. We think that the Sanitary Act as it now stands is quite sufficient for the purpose.

5544. What is the authority in Saxmundham for the purposes of nuisance removal?—The authority in Saxmundham would be vested in the board of guardians, who have a paid inspector for that purpose.

5545. What is the union to which Saxmundham belongs?—The Plomesgate union.

5546. How many parishes are there in that union?—Forty-two.

5547. Is there one inspector of nuisances appointed by the board of Plomesgate for the whole union?—No, there are several.

5548. What is the salary?—I think one that has a certain number of parishes in our district gets 10*l.* a year, that is to say, he is the relieving officer, and the power is vested in him for the discharge of those duties as sanitary inspector. Each one of them has a certain number of parishes, and those parishes that they visit they are the inspectors for; and are paid. The one in our parish gets 10*l.* a year for his duties as sanitary inspector.

5549. How far have the nuisances in the parish with which you are connected been practically dealt with?—I believe that in many respects they have been dealt with in a satisfactory manner. But in speaking of that, I think it would be desirable that there should be a sanitary inspection, that is to say, a periodical sanitary inspection for the purpose, and that the body should be chosen from the vestry who should undertake those duties, and that the result of that inquiry should be reported to the Poor Law Board.

5550. I understand you to say that the committee of the vestry are not the authority for removing nuisances, but the board of guardians?—No, they are not the authority, but I say that the inspection of the parish might be done by persons appointed by the vestry for the purpose, and that they might communicate any nuisance that they might find to the authority. I think, therefore, that a periodical inspection is very desirable, particularly in a rural parish like Saxmundham, and I believe that that would tend more to the public health and good than any drainage that could be devised in a district like the rural parish of Saxmundham.

5551. How far has the inspector of nuisances of the union of Plomesgate attended to the parish of Saxmundham?—I believe he has attended in all instances where the persons have been complained of. I know of none that he has not.

5552. Have you done any public works either of drainage or any other in the parish of Saxmundham?—Not at present; we are contemplating doing works at the present time and have a plan for the same.

5553. What is the nature of the works that you are contemplating?—An intercepting sewer from one end to the other of the town, taking up all the lateral drains.

5554. Do you mean intercepting the house drains and the sewage?—Yes.

5555. Where do they go now?—They go into a brook or stream.

5556. Is there a stream running through the parish?—Not a stream of running water, but it is a brook, we may call it, into which those drains now discharge.

5557. What are you proposing to do with them after intercepting them?—To intercept them and carry them further. It has been suggested, but we have had some little contention about it, that they should be carried further on and carried into the brook as is now done, but only at one place. My own feeling is that it is highly objectionable to carry the nuisance from one part and put the whole of it entirely into another part. It has struck me from what I have read, and from the information which I have obtained, that land in such a neighbourhood of an outfall should be of easy access as far as it can be for the purpose of irrigation; for I believe from all the information which I can obtain that irrigation seems to me the most legitimate mode of dealing with sewerage.

5558. What correspondence have you had upon this subject with the Local Government Act Office?—It has been a long and tedious one.

5559. Will you tell us a little about it. Did anybody on the part of Saxmundham first make application to them or did they in the first instance apply to you?—An application was made to the Home Office to abate the nuisance of running the drains into the stream, I think somewhere about four years since.

5560. What is the size of the stream?—It is merely a brook.

5561. In dry weather like last summer was it nearly dry?—Not quite dry. It would be dry if it was not blocked up at a certain point; that is to say, the river is dammed up at a certain point and it contains anything that might be drained into it, but that is no fault of the parish in particular.

5562. What took place between you and the Local Government Act Office?—We had an order to abate the nuisance, and we called a vestry for the purpose.

5563. What was the first commencement of proceedings?—The first thing was a complaint from a ratepayer.

5564. Whom did he complain to?—To the Local Government Office, and the Local Government Office sent down an inspector. After he visited the town and after his report, we called a meeting of the parish, and at that meeting, and at every other meeting the parish have always expressed a desire to improve the drainage of the town; they have had the disposition to do so, but there has been some difficulty as to the mode of dealing with it as to the outfall; there has been great difficulty in knowing what to do with it. We find that the works are not yet proceeded with. We have already had one gentleman who has an estate in the neighbourhood of where the outfall is likely to be who has served us with notice that if it is taken

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there and proved to be any nuisance he shall bring an action against us, and, therefore, we have been rather in fault perhaps in some respects in not doing it, although we have had a desire to do, but we did not think it was right to perpetuate a greater nuisance than the one which exists.

5565. Have the Local Government Act Office ordered you to do it?—Yes.

5566. Are you still hesitating how to comply, or what?—No; we are simply in this position. We have furnished a plan for the purpose of carrying out works which we believe will be, and in the opinion of our engineer will be, efficient and satisfactory; and we are resting much on his judgment. We have some little confidence in him, and I have given a little attention to it myself these last two or three years, and his opinion as well as mine, from all the information that I can obtain is, that we should dispose of the sewage of the town of Saxmundham as it may be by gravitation for irrigation purposes; but at the same time there is a little difficulty arising in the way of procuring land for the purpose.

5567. Is your engineer a local man, or some one connected with the office in London?—He is a local man; he is a gentleman who had the whole charge of the engineering for Bury St. Edmunds, which is a large town. I have made inquiries of his capabilities there and they are satisfactory. He has also undertaken works more recently, which are now in hand, of a much larger extent than that which we shall require in Saxmundham.

5568. Have your engineer's plans been before the Local Government Act Office?—Yes.

5569. And approved by them?—They have been approved, inasmuch as it has been declared that they would effectually remove the nuisance complained of, but we desire as a parish to employ our own engineer, and there is our difficulty.

5570. There being some difficulty as to employing this man, is your correspondence with the Local Government Act Office at a dead lock?—It is simply this: we have replied to every question that they have asked us, and I believe for the present satisfactorily removing from time to time certain objections which they still keep starting up, as far as may be. Whether it is for the purpose of this said engineer being thrust upon us I cannot say, but we have now made a reply to the objections that this engineer has made, and we think that they are satisfactory; we hope so, and that the works may proceed. We have asked for power to borrow the required sum for the purposes of carrying out the work, and we desire to do so.

5571. Supposing the authority to deal with the question of drainage was the board of guardians of Plomesgate, do you think you would get on more easily, and avoid those obstacles which seem to have arisen from local difficulties?—Sometimes we might have on that body an individual, or two or three, who are large landowners, and of large influence, but I believe that the board of guardians require, in the case of a nuisance, some one of authority to appeal to, if it was desired, that is to say, in London, when persons will not take action.

5572. Do you think that for all local purposes such as drainage, water, and all similar purposes, it would be better that the board of guardians, instead of the vestry, should be the local authority with an appeal, as you say to the Secretary of State?—I think not, so far as the works of the town are concerned. In drainage works, and sewage works I think that the vestry would more than probably study their own interest in the outlay, much better than the board of guardians.

5573. But are they not much more open to local obstacles than a large body like the board of guardians would be?—I think not, I should for my own feeling naturally watch the expenditure of my own rates, and my own property rather than a disinterested person.

5574. Might they not, as far as expense goes, watch the rates too narrowly?—Then we have the authority compelling them to do those works.

5575. But it seems that the authority has not compelled you, or at least very slowly?—That has arisen from circumstances, it has not been a want of disposition on the part of the parish.

5576. I ask you whether those circumstances would not be less likely to arise if the authority was on a larger scale, namely, the board of guardians instead of the vestry?—I think not, so far as my experience in that locality goes, not in the least; it would arise from the same source.

5577. Do you think that the plan of inspection of nuisances is good or might be improved?—I think it might be improved in the way that I have said, in a rural town. I think there is much more injury to health arising from ashpits, and the accumulation of fœtid matter, and so on, around the dwellings of the rural population, than arises from any other source, and that ought to be dealt with.

5578. How can the system of inspection be improved in order to remedy that?—As I have suggested, each parish having a vestry should at periodical times appoint a number of persons to inspect the town.

5579. What period do you mean; should it be an annual inspection?—I think it should be twice in the year myself.

5580. Do you mean to say that they should appoint somebody?—Some three or four chosen from the vestry.

5581. You mean that a committee of the vestry should depute persons for that purpose?—Yes, twice in each year. I think that will tend more to the general health and good than any drainage matter. Questions of drainage in rural districts would not reach the dwellings of a large number of the population.

5582. Would not this committee of the vestry be less likely to complain of their neighbours, and particularly of the owners in a parish on whose land nuisances existed?—We should always see more or less of that under any circumstances, but I know from such an inspection that it tended to do a great deal of good. In the time of the cholera an inspection of that sort was instituted, and a committee appointed for the purpose, and that tended more to cleanse and purify that little place than anything that I can remember in my time, and it struck me then that it should be imperative that such an inspection should be made, say twice in each year, and that the committee should report to the board of guardians for their inspector to visit anything that they had reason to complain of.

5583. I suppose when cholera raged there was a certain amount of alarm, but do you think that in ordinary years you would get nuisances reported?—I think so.

5584. Without the fear of giving offence?—It would be difficult not to give offence, but I think that the duty should stand before that. I should not hesitate if I was the one to make complaint, let it come from what source it would.

5585. (*Earl of Ducie.*) Would not it be probable that this committee of the vestry going round, one member would fortify and encourage the others, and that a man would be ashamed not to report, just because the nuisance was upon the property of some friend or neighbour?—I think that is just it; that is why I say not an individual but a committee of several should be chosen. You would hardly like, or anyone else, to lay himself open to such a censure for the sake of trifling cases, at least I should not.

5586. (*Sir T. Watson.*) How is Saxmundham supplied with water?—From wells.

5587. The brook is not used for that purpose at all?—Not in the least.

5588. Where does the brook go to?—It goes about a mile beyond to Benhall, and it terminates in the sea.

5589. The difficulty which you have in irrigating with sewage which you spoke of, is the difficulty that

objections would be found by the persons to whose lands or neighbourhood you propose to take it?—That is so. That is, providing it was carried into the brook in its entirety, and that is what the vestry of the parish think would be highly objectionable, and refused to do. We are prepared to do irrigation works, and we think that that is the only mode from all the information that we can obtain of dealing with the thing, and it is hoped that we shall ultimately obtain land for that purpose. There is land that might be easily granted, and I hope the day is not far distant when we shall be able to accomplish so desired an object.

5590. Have you waterclosets in Saxmundham?—Not in great number.

5591. Has any use been made of earth-closets?—I believe but in one or two instances; it has not been adopted as a system.

5592. You have no useful experience of it?—No, no useful experience; it is only in one or two instances that it has been adopted.

5593. (*Mr. Bircham.*) Was a part of the plan which was approved by the Local Government Act Office the taking of land for irrigation?—No, the plan which was forwarded to us was prepared by an engineer of theirs, and it carried this sewage into the brook at a distance further on in its entirety, as a whole, and that from our engineer and from other information which I, as chairman, obtained from various correspondence we believed would be highly objectionable.

5594. Was that the scheme approved by the Local Government Act Office on which you were to have raised money?—It was a scheme and a plan sent down to us. When I say it was a plan, it was furnished not by the Government but by an individual, the engineer that I have referred to.

5595. Did the scheme ultimately approved by the Local Government Act Office that you were authorized to borrow money for the purposes of embrace the principle of placing the sewage in the brook?—It did.

5596. Is Saxmundham in a purely rural district?—Quite a rural district.

5597. What is the difficulty of obtaining land for the purposes of irrigation and getting authority from the Local Government Act Office to obtain it?—That is what I have just mentioned. There were certain objections raised which we have now replied to, and we trust that the answer will prove satisfactory, and that we shall have the land for the purpose of irrigation, notwithstanding that we have already received notice, as I before remarked, from a large landowner, and I can only say that he is now making close inquiries as to the mode that we are proposing. So we do not contaminate the brook where some of his cottages are, and where his tenants lower down this brook take their water. His professional man waited on me but a few days since in reference to the matter, and hoped that such might not be the case.

5598. You are mainly dependent upon wells, are you not, for your drinking water?—Quite so.

5599. Are there instances of the water being contaminated by too close proximity of sewage?—Not that I am aware of.

5600. Have you any instances of cottages or of houses for the poor being in a condition unfit for habitation? I have an instance, and I would make a comment upon it now. It is a case where the property might be owned by an individual who had not the means to deal with a nuisance, and therefore I think if it should be in the opinion of the vestry as the authority, that they should report to the inspector to deal with it, and that such expense incurred might be paid by a general rate is a case that is desirable to be dealt with. I have communicated with the persons to whom the property belongs, and they have not the means to do it. I am satisfied that they have not, and I think that there ought to be some power to enable them to have it done, if, in the opinion of the vestry, it would be desirable, and to pay it from a general rate.

5601. Do you think that any good would be done by a public inspection of the condition of houses and cottages of the labouring poor?—That is what I have referred to. I think that inspection by the parish would be beneficial, that is where the great evil in my opinion lies.

5602. You would extend that not merely to nuisances?—I would make sanitary a house-to-house inspection of every one in the parish.

5603. Reporting and suggesting to some authority above the matters that would require correction?—Quite so; in a sanitary point of view that would be very desirable I think in a rural district.

5604. (*Mr. Shaw.*) You are still at issue with the Local Government Act Office, are you not, in the sense that they have not yet agreed to accept any plan?—We are not settled. As I have just remarked, we have replied to the objections which we think are satisfactorily answered by our engineer, and I hope that the thing may terminate in a satisfactory and agreeable manner, and that we shall before long proceed with the works. My own private opinion is, as I have before said, that irrigation seems to be the better mode of dealing with it, particularly where it can be carried to the land by its own gravitation, and the least expensive mode of disposing of it.

5605. You said just now that you could see no reason for the Local Government Act Office objecting except for a sort of wish that you should employ a particular person as engineer; are you not aware that the Local Government Act Office sent down an inspector of their own, Mr. Morgan, and that he, as an unbiassed inspector, on their behalf, completely agreed with Mr. Eyton's plan and rejected the other, and that it was upon that unbiassed report that the Local Government Act Office have acted in all their negociations with you?—In answer to that word "unbiassed" I should be very sorry to say that any public officer has been biassed in any way, therefore I would rather not answer that question.

5606. It seems that the Local Government Office in their correspondence with you say, "The inspector "from this office who is perfectly unbiassed in the "matter, and of wide experience in sanitary work is "clear as to the superiority of Mr. Eyton's plan that "it is of the two, the one which the sewer authority "in the discharge of its duty to the parish ought to "carry out, and that it will be the least expensive "as well as the most efficient." That is the reason which they assign?—Yes, I know that is the reason they assign.

5607. That they adhere to, do they not, in their last letter?—No, not in their last letter.

5608. Have they ever given way upon it?—Yes; so far they have given way upon it, that the only thing is now the carrying of it into the brook. There has been a great modification in it of late. As I have remarked, the parish is desirous of doing this work, but they think they ought to have the privilege of employing their own engineer.

5609. The Local Government Act Office agree with you on that point; they say in their letter of March 6th, "In reply I am to state that there never has been "any intention to contest the right of the vestry to "employ what engineer they pleased. The inspector "has only pointed out the superiority of Mr. Eyton's "plan to that of Mr. Croft, as regards the line and "gradient of sewers and the cost of the work. I am "to point out further as a matter for the careful con-"sideration of the local authority that an element of "uncertain cost is introduced in Mr. Croft's plan, by "the nature of the ground traversed by his sewer in "Mr. Longs plantation, where the depth to which he "will have to go for a foundation cannot be deter-"mined except by trial. If the vestry after considering "the reports of the inspector deliberately prefer Mr. "Croft's plans, it will be the duty of the Secretary of "State to consider any application that may be pre-"sented for sanction to borrow the sum required for "their execution," so that they represent that they did not in the least object to your employing your

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own engineer; they object to their engineer supporting a plan which they did not approve?—But the plan which they suggested would entail a very heavy outlay on the parish which we consider would be quite unnecessary. In addition to that I believe it would create a greater nuisance by reversing the gradient of drains which would be intercepted by coming under the houses. In several instances the drains would have to come under the foundations of the houses, and I believe that can be avoided by the plan which we in the parish suggested, knowing the locality well.

5610. It comes to this, does not it, that yours is a scheme which the Local Government Act Office decline to approve, and that Mr. Eyton's plan has satisfied, and is approved of by, their own inspector; that is the present hitch?—It does not appear by their recent correspondence that that is so much so as it was at one time. It now seems to be the terminus more in particular; that is to say, the disposing of the sewage seems the great difficulty.

5611. Do you mean to say that the Local Government Act Office approve of a plan for shooting solid sewage into a brook?—I am sorry to say that it did. It struck me with amazement when I saw such a plan, and heard such a report, and for that reason we stood firm. As I have said before, it would be to carry away the nuisance which we would not have ourselves, and to perpetuate one in a worse form in another place.

5612. (*Mr. Powell.*) You suggested that in the cases of very poor people the expenses of certain improvements should be paid by the community instead of by the individuals. Are you aware that there is power under the Act of Parliament now for the community to do the work, and to pay the money, and then to be repaid during a period of 30 years? Does not that provision appear to meet the case?—No, it does not appear to me to do so, because it would probably be a very simple matter of comparatively few shillings, or a pound or two, and still be a nuisance injurious to health which might be removed by the local authority.

5613. You have in mind cases of so small an amount as not to be worth the process of a 30 years' loan?—Yes, that is what I referred to.

The witness withdrew.

W. Long, Esq.

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(41.) William Long, Esq., examined.

5614. (*Lord R. Montagu.*) You are the chief landowner about Saxmundham, are you not?—I am; in the parish of Saxmundham particularly.

5615. You obtained, I believe, from the county surveyor a scheme for the drainage of Saxmundham and the utilization of sewage in the year 1865?—Yes, about that time.

5616. You proposed to utilize the sewage on your own property, I believe?—No, upon a site which was offered by Mr. John Chevallier Cobbold, the late member for Ipswich.

5617. The sewage was to be utilized on Mr. Cobbold's property, but you, I believe, offered to pay a great part of the expenditure?—I offered 100*l.*, and the estimate was 400*l.* I was also to pay the amount of my own tenants. I am rated at about 1,000*l.* a year in Saxmundham altogether with my tenant's property.

5618. (*Chairman.*) 300*l.* was to come out of the rates, you being the largest ratepayer?—Yes.

5619. (*Lord R. Montagu.*) And you offered to give 100*l.* besides?—Yes.

5620. That scheme was resisted, was it not, by a majority of the ratepayers?—Yes.

5621. On what ground?—Reporters were present at all vestries, and therefore the circumstances are public to everybody, I believe that it was from sheer prejudice against anything like improvement, and against expending money for such uses.

5622. You mean against improvement in the shape of sewering or the utilization of sewage?—Yes, very likely, and there are other reasons I believe.

5623. It seemed that they had a decided preference for a person who was not an engineer?—Yes, he is a surveyor and tradesman who has had the management of works at Bury St. Edmunds. I understand that he is a very respectable man, in his way, but he is not a person who has had great experience beyond his immediate sphere.

5624. The plan that he made was based upon figures wrongly calculated, I believe?—I was informed by persons that his plans were not those of a qualified engineer, and therefore I went to the Government office and they recommended me to refer them back to the county surveyor. He reluctantly undertook to examine them; but as the surveyor was employed by Government, I therefore had their sanction that he was a fit person to whose hands I could place them.

5625. Have you got in your hand some letters from the Local Government Office on the subject?—Yes, both apply to the carrying out of a second scheme for which Mr. Morgan, the government inspector, employed Mr. Eyton, the county surveyor, for the surveys, and they are as follows:

Local Government Act Office,
January 29, 1869.

Sir,

I am directed by Mr. Secretary Bruce to forward to the vestry of Saxmundham a copy (enclosed) of the inspector's report on two plans for the drainage of that parish, submitted for approval, and to state that, under all the circumstances of the case, it appears clear that Mr. Eyton's plan is the preferable one of the two; and that it should be carried out by the vestry in preference to Mr. Croft's plan. I have to add that the Secretary of State is prepared to sanction a loan for the purpose.

I am, &c.
(Signed) T. Taylor.

To the Clerk of the Vestry,
Saxmundham.

Local Government Act Office,
Whitehall, January 27, 1869.

To the Right Honourable Henry Austin Bruce, M.P., Her Majesty's Principal Secretary of State for the Home Department.

Sir,

I have the honour to state that a plan and estimate for the main drainage of Saxmundham were prepared in August last by Mr. Eyton, of Ipswich. This plan met with my approval, and that of Mr. Long, the chief memorialist, in a petition presented in 1866, as to the default of the sewer authority in providing drainage for Saxmundham. The plan was afterwards submitted to the vestry of Saxmundham, and at their meeting held on the 19th of September 1868, it was rejected by them, and a plan prepared by Mr. Croft, of Bury St. Edmunds, was adopted. Mr. Croft's plan report and estimate were received here on the 15th of January inst., with a letter from Mr. Thurlow, the chairman of a committee appointed by the vestry, requesting your approval of the said plan. In pursuance thereof I have considered the respective merits of the two plans, and I have now the honour to lay before you the result of my examination. No application from the Saxmundham sewer authority for your sanction to borrow the sum required to defray the cost of the works accompanied Mr. Croft's plan and estimate.

Mr. Eyton's and Mr. Croft's plans differ from each other in many respects, namely, Mr. Croft's line of main sewers is shown to pass between the main street and the stream, and across Mr. Long's plantation. Mr. Eyton's sewer is taken along the centre of the main street from one end of the village to the other; by so doing the sewer is made available for the drainage of the houses on the higher or west side of the street that are not reached by the existing drains, and the plantation, which is of soft boggy land, is in a great measure avoided. The direction and length of the sewer through the park to the outfall is very much the same in both plans. The sewers proposed by Mr. Croft are of much smaller diameters than those by Mr. Eyton, and Mr. Croft's gradients are less favourable. Mr. Croft

proposes that the sewer through the park to the outfall be 10 inches in diameter, with a fall of one foot in 828. Mr. Eyton proposes that the sewer over the same ground shall be 15 inches in diameter, and the fall one foot in 425, which is nearly double that obtained by Mr. Croft.

The estimates are as follows:—Mr. Eyton, 836*l.*; Mr. Croft, 634*l.* Mr. Croft has not named in his estimate any prices upon which it is based, nor has he included his own charges for the preparation of his plans and the supervision of the works during their construction. Mr. Croft's estimate does not provide any sum as compensation for passing through or under dwelling houses, outbuildings, gardens, and yards as shown upon his plan. Mr. Eyton by passing along the main street avoids this outlay for compensation altogether. It is difficult to estimate the extra cost that will be incurred by taking the sewer through Mr. Long's plantation along the line proposed by Mr. Croft. The ground there is soft and boggy to considerable depth, and is saturated with water; it may, therefore, be impossible to obtain a firm foundation for the sewer without resorting to artificial means. The length of sewer through the plantation is over 200 yards. Mr. Eyton in a great measure avoids this bogland by keeping to the highway and entering the plantation at a higher point. The length of his sewer through the plantation is about 70 yards. The soil of Saxmundham is sandy, and the probability is that much sand will, at certain times, find its way into the sewers. I should therefore advise that an increased capacity over Mr. Croft's size be obtained by laying pipes of 12 inches in diameter instead of 10 inches in diameter, although theorerically the dimensions adopted by Mr. Croft are sufficient for the present requirements. Both plans provide means for flushing the main sewer at its highest point. Either plan will effectually exclude the sources of pollution complained of in the memorial before alluded to.

When the cost of engineer's charges, an amount for compensation, the extra cost of passing through the bog land in the plantation, the increased size of the sewer from 10 inches in diameter to 12 inches, as is now recommended, is added to the lesser estimate (Mr. Croft's) it will become the greater of the two. The substitution of pipes 12 inches in diameter for 15 inches will reduce Mr. Eyton's estimate by 170*l.*

The committee ought to consider the wishes of the proprietors through whose land the sewer will pass, and what will satisfy the memorialists. Mr. Long and Mr. Cobbold, who are both owners of property along Mr. Croft's line of sewer, have expressed their decided objection to that proposed by him between the main street and the stream.

Upon consideration of the points to which your attention has been directed in this report, I cannot arrive at any other conclusion than that Mr. Eyton's plan is the best and most comprehensive, and when the deduction is made in his estimate for the substitution of pipes of 12 inches in diameter for those of 15 inches, the works which he proposes will be executed for a less sum than that named by Mr. Croft, taking into consideration the different items omitted to be included in his estimate. I therefore beg to recommend that intimation to this effect be given to the Saxmundham sewer authority, and that they be forthwith required to carry Mr. Eyton's plan into execution.

I have, &c.

(Signed) ROBERT MORGAN.

Local Government Act Office,
8, Richmond Terrace, Whitehall, S.W.,
March 6th, 1869.

GENTLEMEN,

I AM directed by Mr. Secretary Bruce to acknowledge the receipt of your letter of the 2nd instant, with further reference to the question as to the schemes for the drainage of Saxmundham. In reply I am to state that there never has been any intention to contest the right of the vestry to employ what engineer they pleased. The inspector has only pointed out the superiority of Mr. Eyton's plan to that of Mr. Croft as regards the line and gradient of sewers and the cost of the work. I am to point out further, as a matter for the careful consideration of the local authority, that an element of uncertain cost is introduced in Mr. Croft's plan by the nature of the ground traversed by his sewer in Mr. Long's plantation, where the depth to which he will have to go for a foundation cannot be determined except by trial.

If the vestry, after considering the reports of the inspector, deliberately prefer Mr. Croft's plans, it will be the duty of the Secretary of State to consider any application that may be be presented for sanction to borrow the sum required for their execution, but I am to point out that, in the interest of the parish the execution of a plan of work must not be longer deferred.

In conclusion I am to point out that, though in a letter from this office it has been stated that a statement in writing would be a more satisfactory manner of bringing the question to an issue than the proposed deputation, there has been no refusal to receive such a deputation if the local authority did not agree with the Secretary of State that it would be a waste of time and money.

I am, &c.

T. TAYLOR.

Messrs. Thos. Thurlow and Robert Flick,
Saxmundham.

5626. Was it the scheme o this person to carry the sewage into the river?—The first plan he proposed was to have a tank in my park, and carry the waste water some distance further.

5627. What was the second plan?—Upon the recommendation of Mr. Morgan, the Government inspector, who said that it would be a great advantage to my property, and to the town of Saxmundham, if the sewage was carried further, I accepted a modification of their plan so as to allow them to carry it into some further land of mine about a mile from the town. I may tell the Commission that the "river" is a small brook which is enlarged into an ornamental water by being dammed. The ground falls very much. (*The witness produced a plan and explained it to the Commission.*)

5628. I believe there is now a plan by the county surveyor authorized by Government?—Yes.

5629. Is that plan which is authorized by Government opposed by the ratepayers?—Yes, and they have put forward another.

5630. Are you still in favour of the utilization of sewage and carrying out the plan of sewerage in the town of Saxmundham?—Certainly I am, and I believe the first plan that was proposed would have been sufficient, and the second would certainly be so, but I see no possibility of carrying it out at present, because I believe there is a dead lock. I do not see how it can be done with the present feelings of the people. I do not wish to say anything against them; they all know that I am their supporter.

5631. In fact it is the prejudice of the ratepayers which at present prevents any wise system being carried out?—It is my impression that there is not a favourable disposition to general improvement. Perhaps I may be allowed to say that I think that they were misled by an incautious expression of the Government. The vestry wrote up to say, "did "Government mind what mode of drainage was car-"ried out?" and the answer of Government implied if the complaint was obviated it was not the office of Government to interfere further. Having, however, very valuable property there, and it is a most beautiful country seat, it is a matter of very serious consideration to me.

The witness withdrew.

Adjourned till Thursday next at 12 o'clock.

Thursday, 8th July 1869.

PRESENT:

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

The EARL of ROMNEY.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
JOHN ROBINSON MCCLEAN, Esq., M.P., F.R.S.
SAMUEL WHITBREAD, Esq., M.P.
JOHN TOMLINSON HIBBERT, Esq., M.P.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
ROBERT CHRISTISON, Esq., M.D., Pres. R.S.E.
WILLIAM STOKES, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.

W. Stokes, Esq., M.D., F.R.S.

8 July 1869.

(42.) WILLIAM STOKES, Esq., M.D., F.R.S., a member of the Commission, examined.

5632. (*Chairman.*) You are Regius Professor of Medicine in the University of Dublin?—Yes.

5633. And a fellow of the Royal Society, and also a member of this Commission?—Yes.

5634. Will you give us your opinion as to the discharge of ordinary sewage from dwelling houses into rivers, how far you consider that injurious to the public health?—I have a very limited experience of the subject, but in the city of Dublin the river Liffey runs through the very heart of the town, and it receives from beginning to end all the sewage of the town. It is a tidal river, and although at low water in hot weather a horrible smell is often evolved, it has never been established that the inhabitants of the quays, who are very numerous indeed, are more unhealthy than the inhabitants of any other part of the city. That is a fact, explain it as we may, which I think it behoves the Commission to know. I may add to that evidence that this sewage does not seem injurious to sea-fish, for we constantly have the river, during its whole course through the city, full of sea-fish,—and not only that, but salmon in great numbers pass up through the river up to and beyond the tidal line, and the upper Liffey is a celebrated salmon fishery, and has been so from time immemorial.

5635. Do you wish to make any further observations on the question of polluting rivers?—No, I have nothing further to say upon that subject.

5636. Have you any remarks to make to the Commission on the question of the registration of death?—The form of registration with which I am familiar is that used in Ireland. I do not know how it differs from the form in England, but the great objection to the form in Ireland is that it calls on the medical attendant to make a number of statements which he can only, I believe, make from hearsay,—such as the length of time the disease has lasted, the actual age of the patient, and matters of that kind. I have not got the Irish Act of Parliament with me, but it strikes me that all that should be required on the part of the medical attendant is to give his opinion as to the cause of death, and that all matters connected with the age, the length of the disease, and even the fact of the death should be recorded by other parties: because, in a large number of cases the medical man really has to take the fact of the death from other people,—he has not seen the body at all. It commonly happens that where a case is given up by the medical attendant, no other physician is called in, and the patient is, as it were, left to die, it may be in a week or a month after the last medical visit; and therefore the very fact of the death he certifies simply from hearsay.

5637. Does a post-mortem examination give always sufficient information as to the cause of death?—It does not always give sufficient information. There is no problem more difficult than to determine the cause of decease, even by a post-mortem examination in many cases. There are certain conditions which we know to be incompatible with life, and where such conditions are found, the explanation of the cause of death is not difficult; but those conditions are quite exceptional, and in the great majority of cases, even where you find local disease, it does not follow that the patient died of that disease. He died with it, but not necessarily of it; and that is a condition of uncertainty in relation to all returns of death, which the Commission should clearly understand. I every day see reports of coroners' inquests, where gentlemen swear to this or to that as being the cause of death, but I would as soon cut off my right hand as swear to this or that being the cause of death, as I have heard done.

5638. Are there cases in which you think there is a temptation to falsify returns?—There are. A very remarkable one is the case of puerperal fever. If a woman dies in childbirth it is looked upon to be the visitation of God, and an inseparable accident from the process; but if she dies in a week afterwards or 10 days or 15 days afterwards, then the physician is blamed, and he will have a great disinclination to return the case as one of puerperal fever if he can lay his finger upon anything else, he (I am not talking of the better classes of my profession) will specify as the cause of disease that she may have died by disease of the head or of the lungs, or she may have died of other parts, but the real nature of the disease is concealed. So also with respect to delirium tremens, and with other diseases. These are all very great difficulties in the way of correct returns.

5639. Is it your opinion that fever hospitals should ke kept separate from other hospitals?—I think that that is a difficult question. In country districts it might be desirable to keep them separate from other hospitals, but in large cities I rather think that it is a mistake to separate them. I mean of course that fever cases should have separate wards, and that the patients in fever should be separated from patients not in fever; but one great object of the hospitals in large cities is instruction in medicine, and there is no disease of greater importance for clinical instruction than the study of fever, because the principles of the treatment of fever are the same all over the world, and a young man may learn the treatment of yellow fever or the plague in a London fever hospital, just as much as if he was on the spot where the disease occurred. For the public service this education is all important. It was stated by Sir Gilbert Blane that in the Spanish campaign under the Duke of Wellington more men died of fever than from all other causes, including the sword. And then there is this remarkable fact, that in the Meath hospital, since the year 1833 or 1834, we have had the upper part of the house occupied by fever cases. Typhus fever, typhoid fever, small-pox, scarlatina, and all sorts of contagious diseases, and from that day to this there has not been a single example of a contagious disease being communicated from our fever wards to the other wards of the hospital, and latterly we have even gone further, and have established a chronic medical ward on the same corridor as the fever wards, and with the same result. That is a very interesting fact. There is great attention to cleanliness and to ventilation, and no mischief done.

5640. What is your opinion about the employment of public carriages for the conveyance of infectious diseases?—I think that the law against the use of public carriages is a harsh law, and I am quite sure that it is a nugatory law. I do not see why the sick should not avail themselves of public conveyances.

I believe it is prohibited, but I rather think that it is prohibited upon insufficient grounds. I do not think that there is evidence enough of contagious disease being conveyed by public carriages to warrant the law, and the law if carried into effect will often be extremely cruel, and more mischief may be done by keeping a patient waiting for a special carriage than by any risk of infecting a public carriage.

5641. Is there any other point on which you would favour us with your opinion upon the subject of our inquiry?—None other, except with respect to the registration of disease. I conceive that if the dispensary districts throughout the country were the same as the poor law districts, it would be very desirable that the dispensary medical officer should act in both capacities,—as registrar of disease and as medical officer. He might have a central officer to refer to, who might embrace several areas, but I think that in Irelaud the system is admirably constituted for registration in consequence of the dispensary district and the poor rate district being conternimous.

5642. (*Mr. Hibbert.*) With reference to what you said about the river in Dublin, how are the excreta generally removed from houses in Dublin—is it by drains or by the use of cesspools, or other means?—They are washed into the sewers. There are 50 or 60 openings for sewerage into the river through the quays.

5643. Do those sewers discharge into the river within the limits of the town?—Yes, and the sewer is blocked up by the river at high tide. The high tide enters the sewer, and as it were blocks it up, so that it very often happens that there is a dreadful smell in the houses in the vicinity at high tide.

5644. (*Lieut.-Col. Ewart.*) Is the river tidal for a considerable part of the city?—It is tidal all through the city.

5645. And that action of the tide, I presume, serves for scouring away the sewage?—Yes, it does so to a certain extent, but still notwithstanding, at low water in warm weather the bed of the river exhales an abominable smell.

5646. The existence of the quay wall, I suppose, prevents there being banks upon which the pollution settles?—Yes, but then the river Liffey is very small in summer, and at low water the banks at the foot of the quay wall are to a great degree exposed.

5647. But they are always washed at high tide, are they not?—Yes.

5648. (*Sir Thomas Watson.*) You stated that the contagious diseases occupying the higher wards of the Meath Hospital do not spread to any of the wards below, nor indeed to one on the same floor, have there been any cases of diseases spreading by contagion to any of the medical officers or the nurses?—There have been cases of their spreading to the students, and to the nurses also, but not very frequently, by any means. There have been cases of small-pox, but not many cases looking to the whole period, which is now 35 years at least; there have been a good many cases of typhus fever amongst the students.

5649. I gather from your answers before that you do not think it is a bad thing to accumulate fever patients in one ward, and that you attribute the exemption of the other wards from disease to the care which is taken with respect to ventilation and cleanliness?—Yes; the whole house is kept carefully clean and ventilated.

5650. (*Dr. Acland.*) With respect to the duties of the registration medical officers, should you be disposed to assign to them the powers of sanitary inspectors generally?—I think in a certain degree that might be so, if they had a chief over a certain number of them.

5651. How many districts or unions should you be disposed to put under one sanitary inspector?—I have not made up my mind upon the subject, but I think that the districts might be pretty extensive.

5652. Such as a county?—We have a great variety of sizes of counties in Ireland, but I think that an average county with respect to the number of souls which should be inspected might do; I cannot offer much of an opinion about that.

5653. It would only be a question of administrative detail in marking out the area?—Yes.

5654. Should you propose that those sanitary inspectors should be persons of high education and educated for that special purpose?—Whether they were educated for the special purpose or not I should not particularly say, but they should be men of a very high class.

5655. If they were not specially educated for the purpose they would be able to employ perhaps analysts or other experts on particular occasions under their direction?—I think so.

5656. (*Mr. Lambert.*) Do the union medical officers in Ireland exercise any sanitary power?—I think they have no authority of their own in sanitary matters. They may act as advisers to the poor law boards, but they have nothing like authority of their own that I know of. I believe there are a few officers of health. I know that we have an officer of health in Dublin, but I am not prepared to tell you what his powers are. I really do not know the extent of his powers.

5657. Do you know whether the boards of guardians have any power to appoint a sanitary officer?—I never heard that they have not.

5658. I believe that the union medical officers in Ireland are well qualified medical practitioners, are they not?—Yes, generally; but I may say, and this is another matter which the Commission ought to know, that in the condition of Ireland there is now a great tendency to make the election of poor law medical officers upon political grounds or upon sectarian grounds; this is a very great and mischievous tendency indeed.

5659. I presume that they are all persons who have passed their examinations?—Yes, they are; but that is not always a very high test as matters stand.

5660. Do you think that as a general rule they would be competent to discharge the duties of sanitary officers?—I doubt that extremely; I think those men that are of standing and have got experience, even though they were insufficient at first, by use and experience may become quite fit for the duty. Medicine is a study which instructs a man as he goes on, but a young man I would say is very seldom fitted for those purposes.

5661. Having regard to the existing organization in Ireland, can you suggest any other officer who would be able to discharge the duties of a sanitary officer better than the union medical officer?—I think that there might be a superior medical inspector over such a number of areas as the law would direct, and that that man should be very highly educated in State and public medicine, and in preventive medicine, and he might have the assistance of the dispensary officer at the local dispensaries. I think that that would be an admirable arrangement.

5662. The dispensary medical officer is a man who is constantly going over the district, is he not?—Yes.

5663. And there would be no difficulty in his reporting from time to time to the sanitary officer of the district?—No; no man knows the people so well.

5664. With regard to the sanitary state of the inhabitants on the quays in Dublin. When you spoke of the sickness and mortality amongst them in comparison with other parts of the town, I presume you included the whole city in that observation?—The whole city. My authority is a gentleman second in position in the Registrar General's office in Dublin; he is the person who looks over all the returns.

5665. In Dublin there are a considerable number of narrow streets, are there not?—Yes, there are a great many.

5666. And the dwellings are very much overcrowded in some parts?—Yes, they are. The principal source of the unhealthiness of those parts of the

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town is the overcrowding and the bad ventilation, and the want of cleanliness, and I may observe that the attention of the authorities to the cleanliness of the dwelling houses is a very important thing, and it is very much neglected.

5667. With regard to the inhabitants on the quays, the houses in which they dwell have their fronts to the quays, have they not?—Yes.

5668. And there is a road between them and the river?—Yes, there is a wide road.

5669. And there is an excellent current of ventilation constantly existing there?—Yes, always.

5670. (*Mr. McClean.*) Can you tell me what the death rate of Dublin is?—I do not know, it is a matter with regard to which I could not give any but an approximate answer.

5671. (*Mr. Shaw.*) I do not think that the conveying of persons with infectious disorders in public vehicles is strictly forbidden in England; it seems to stand in this way under the Sanitary Act of 1866, (29 & 30 Vict. c. 90, secs. 25 and 38,) that if any person suffering from any dangerous and infectious disorder shall enter any public conveyance without previously notifying to the driver that he is so suffering, he shall be liable to a penalty, and the driver is entitled to ask from him before he takes him sufficient money to provide for the disinfecting operation which he is required to carry out after having carried such person, what I wish to ask you is this, does your objection apply equally to that as it would to its being expressly prohibited?—It does not, certainly, but still notwithstanding, looking to the great necessity for quick removal and the corruptibility of the drivers, the law seems to me under any circumstance likely to be a nugatory law.

5672. (*Mr. Powell.*) You stated, and you gave us some very interesting illustrations of your statement, that in some cases diseases were not accurately reported after death, do you see any remedy for that inaccuracy?—I see no remedy but the existence of a superior officer who in doubtful cases would make special inquiries.

5673. Then my difficulty is this: how could that superior officer know that a case was a doubtful one without examination in person, and so bringing in a second medical man into the house of a private individual, and so perhaps creating certain opposition to the law?—That is a very great difficulty no doubt; but all those things are to be put to the debit side of the accuracy of our returns.

5674. You made that statement, did you not, rather as illustrating the cause of the inaccuracy than as thinking that the nature of the question would not allow of remedy?—Yes.

5675. When you made mention of cases where there was a fever ward, and in other parts of the hospital the fever did not spread, I presume that great care was taken to isolate the nurses and attendants?—No, the medical attendants were the same, the nurses were different, but they were not isolated, the nurses mixed socially together, but the medical attendants and students are the same for the chronic medical ward, the surgical wards, and the fever wards.

5676. Was that hospital unusually spacious as regards its corridors?—It is very well ventilated and sufficiently spacious.

5677. And probably in a very airy situation?—It stands at the south side of Dublin, with the mountain air upon it. It stands in Dean Swift's garden.

5677*a*. (*Chairman.*) Have you any other observation to make?—Only this, that it has long struck me that the occurrence of epidemic disease on a great scale is to be attributed to something else than the existence of those conditions which it is the object of sanitary measures to remove. In Ireland, both in the towns and the country districts, the conditions in question have long been permanent, but the presumed effects, such as epidemics, have been singularly inconstant. Since the famine fever in 1847 and 48, typhus is so rare in Ireland that many of the country fever hospitals have been closed.

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(43.) Henry Wentworth Acland, Esq., M.D., F.R.S. a member of the Commission, examined.

5678. (*Chairman.*) You are Regius Professor of Medicine in the University of Oxford, are you not?—Yes.

5679. And a member of the General Medical Council, and a member of this Commission?—Yes.

5680. Will you state what are the duties of the General Medical Council?—The General Medical Council was appointed under an Act of Parliament in the year 1858, for the purpose of distinguishing between qualified and unqualified practitioners in the United Kingdom, and for making a register of all such practitioners, in order that the public might know who have been properly educated, and might act accordingly. They had also to construct a national pharmacopœia, so that the medicines used in the three parts of the kingdom should be of uniform strength and quality. And lastly, they had to control and regulate the future education of medical practitioners throughout the kingdom, for the purpose of securing to the public a uniform and a high standard of qualification for practitioners in every part of the country. They have constructed that register for some years; they have completed the pharmacopœia to the satisfaction of competent judges, and they have been engaged in a careful and elaborate system of supervision of education and examinations in all the universities, and medical licensing bodies of the kingdom. And in that work they are at present engaged.

5681. How is the council constituted?—There is a representative from each of the universities in England, Scotland, and Ireland, and from each of the medical corporations of physicians, surgeons, and apothecaries, and there are six nominees appointed by the Crown. With the exception of the last that I have mentioned, those persons are elected by their respective bodies, and they meet, as often as the president who summons them thinks is conducive to the public interest, for the transaction of business.

5682. Has the Medical Council entertained the question of the education of sanitary inspectors or medico-legal experts?—Watching the wants of the country, and looking forward to the future requirements of its populations, whether the dense urban populations or those of the rural districts, and seeing that the subject of public hygiène as it is called in France, or State medicine as it is commonly called in Germany, is a growing subject, the General Medical Council have paid great attention to it. Perhaps the Commission would like that I should state in very few words what it is that they have done; premising only that of course in a comparatively new educational question of this kind it is essentially constructive and prospective, and cannot, any more than the revision of the old methods of education and examination, be completed in a moment, but is still under consideration. The council appointed in the course of last year a committee: this committee was charged with the duty of inquiring in this country and in foreign countries, as to their supposed sanitary wants, and as to the duties which the medical profession should reasonably be called upon to discharge in respect of those wants. It will be obvious to the Commission that in the highly developing and highly developed state of chemistry, of anatomy, of physiology, and of toxicology, and with the immense mass of knowledge now collected in the department of forensic medicine, it is practically idle to suppose that a man, because he might be a good curative general practitioner, was necessarily an expert, capable of solving all the questions which might be raised in courts of law on any of the subjects that I have

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just named. Therefore it was not considered by the General Medical Council to be in any sense derogatory to the old class of curative practitioners that they, 50 years ago, had not been educated in departments which could hardly be said to exist, and indeed it is quite a question now in their minds how far it would be possible and desirable, if possible, to educate a class of experts especially for this purpose. However, they thought it their duty to make this inquiry. I have in my hand a Report on State Medicine, which I shall be happy to furnish to each individual member of the Commission, now that it is public property, but which I will not hand in, because it is too large and lengthy to be put upon our minutes, although I should be very glad if any extract should be used or the whole printed, if you think fit. The answers which the General Medical Council has received from their different correspondents include such persons as our present Lord Chancellor, who on one particular point speaks with great authority, Professor Guy, Dr. Farr, Sir William Jenner, and many others whom I could name, and several foreign correspondents, such as Varentapp, Pappenheim, Rokitansky, Pettenkofer, and other persons, together with abstracts of the codes in vogue in foreign parts. Those letters and those answers we have before us, and they form an interesting resumé of a comparatively new subject. The Committee hopes to apply to Parliament for powers to enable the council to register the result of examinations or diplomas giving a proper and suitable qualification to those young medical men, who wish to qualify themselves for this department of the public service. I will only add that I think that the General Medical Council acted with propriety in originating this step as it did last year, but that in fact its deliberations will be materially assisted by the conclusion of the labours of this Commission, since it will be easier to construct regulations for the examination and education of students or practitioners of this kind, if we know that there is a prospect that young men whose talents are directed into that channel are at all likely to be employed. Otherwise the council might perhaps be charged with acting with a little precipitancy if it were to induce men to devote their lives entirely to subjects of this nature, when the country in which they propose to live said that it had no intention of employing them. According to the ordinary laws of supply and demand no doubt that will find its own level. You would cease to have those highly educated and those highly skilled persons if they found no occupation. But in the meanwhile these are the steps which the council has taken and is taking, and we shall wait for your report to judge perhaps on some of the details which we might be disposed to suggest to the different licensing bodies who may like to turn the attention of their students to a qualification of this nature.

(44.) Thomas Gillham Hewlett, Esq., examined.

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5683. (*Dr. Acland.*) You are a surgeon in the Bombay army, are you not?—I am.

5684. How long have you been so?—I have been in the Bombay army for 15½ years.

5685. What appointment is it that you hold now?—I am the health officer of the city of Bombay, and I am also coroner of Bombay.

5686. How long have you held those offices?—Since the 1st of July 1865.

5687. Were you appointed to be health officer and coroner at the same time?—No, I was appointed coroner first. I was sanitary officer before that to the municipal commissioners, who ceased to exist on that date.

5688. What is now the constitution of the municipality of Bombay?—A corporation consisting of the bench of justices of the peace and certain municipal officers.

5689. By whom are the justices appointed?—By the government.

5690. Under what Act?—Under the Municipal Act of Bombay.

5691. Is that Act now complete, or is it under revision?—It is under revision.

5692. Is it under complete revision, or are you only making additions to it?—We are adding to it. When I left Bombay the Act had been sent to each head of a department to make those alterations in it which he considered were necessary, and after doing so he returned it to the municipal commissioner for his approval previous to transmission to the bench, but I am not quite sure what action has been taken since I left India last year.

5693. Does that Act comprise on the whole all the sanitary laws which you desire to see in the municipality?—It does not at present as it stands, but the revised Act would do so.

5694. So that you expect in that one Act to include upon the whole all the clauses necessary for regulating sanitary work?—I do.

5695. What officers are appointed under the Municipal Act?—First, a municipal commissioner, in whom is vested the entire executive power and responsibility; secondly, a controller of municipal accounts, who supervises the receipts and disbursements of the municipal fund, and has charge of all municipal accounts; thirdly, an executive engineer who in all things is under the immediate orders of the municipal commissioner; and fourthly, a consulting officer of health, whose duty it is to afford advice to the commissioner for the sanitary improvement of the city.

5696. By whom are these officers appointed?—By the governor in council, by whom also they are removable from office.

5697. How long has that Act been in operation?—From the 1st of July 1865.

5698. Was the health officer a consulting officer at the time of the passing of the Act?—He was appointed by the government as the consulting officer of health.

5699. Has he no administrative or executive duties?—On the 1st of November, that is four months after the passing of the Act, Mr. Crawford, the municipal commissioner, saw that it was imperative that the health officer should be entrusted with executive powers, and accordingly the bench of justices appointed him as such, and he became the executive officer of health on the 1st of November 1865.

5700. That is yourself?—Yes.

5701. Is the whole of the city under your sanitary jurisdiction?—Yes, under the general control of the municipal commissioner.

5702. What is the extent of the city?—It is 11 miles long and of an average breadth of 2½ miles. The surface area is computed to be about 18·62 square miles.

5703. What is the population?—At the census taken in February 1864 it was 816,562. Bombay is the second largest city in her Majesty's dominions.

5704. What is the density of the population?—The native town covers a surface of 606·60 acres, and affords an average of only 6½ square yards to each of its 449,891 inhabitants.

5705. Was the city of Bombay cleansed before the Public Health Department existed?—The scavenging was left to a contractor who most inefficiently performed that work.

5706. Did he do any work under the instruction of the municipalty?—He did so, but in four months Mr. Crawford cancelled his contract.

5707. What were the duties that were assigned to the contractor at that time?—To remove the street sweepings, and to remove the material in the so-called drains of the town.

5708. That was prior, was it not, to the appointment of a regular officer of health?—Yes.

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5709. What was done on the appointment of the officer of health to amend this?—The first thing Mr. Crawford did was to divide the city into 11 wards, and to give to each ward a distinct establishment of carts and coolies, with a European inspector at the head of all. The wards were divided into sections, each section into subsections, and every man had a particular portion of a subsection allotted to him to cleanse. By this means responsibility could be fixed upon some one individual.

5710. And one health officer had the control of the whole?—Yes, one health officer had the control of the whole.

5711. Do you think that those duties were more than ought to be imposed upon one person, or do you think that one person is capable of the general superintendence of so large a population?—I think that one person is thoroughly capable of superintending a city of the dimensions of Bombay, only he has to make his working day longer than his neighbours. He cannot do it in the regular office hours, but my working hours are from 4 in the morning till ½ past 6 at night, with an intermission of about an hour and a half for breakfast, and on Saturday morning from 3, because I have to go to the outlying districts.

5712. Can you tell the Commission what number of persons you have under your control for the execution of your scavenging operations?—About 3,000 altogether: about 1800 for scavenging, and about 1,200 for the removal of night soil.

5713. Are you about to establish any system of sewerage?—Yes. A Commission appointed by Government has been sitting to enquire into the question of drainage and water supply, and has had under consideration a report by Captain Tulloch, of the Royal Engineers, regarding the drainage. The report of the Commission is not yet out, and I am not sure whether Captain Tulloch's scheme will be adopted, but certainly some scheme will be adopted shortly.

5714. Then a great part of the duties of the health officer will cease, and he will not, I presume, have to superintend so great an army of scavengers?—He will still have to do that, because there is an immense surface to be cleansed. The drainage, even if we have waterclosets, will merely remove the nightsoil and the house slops, but there is an immense quantity of surface to be cleansed. For example, you may imagine what the surface cleansing means when I tell you that in the year after I began work we sent out 103,000 tons of surface cleansing, street sweepings, and garbage, and each year since about 111,000 to 112,000 tons have been sent out.

5715. How is that disposed of?—After collection it is taken down to the railway and put into waggons and sent out ten miles to a salt marsh, where it is deposited in heaps which probably will eventually form the market garden of Bombay.

5716. When the sewers are constructed will the proportion of garbage be very much diminished?—No, the collection of night soil is entirely distinct from the surface cleansing. The collection of night soil is done by hand, by a set of men devoted to the work, and therefore that is entirely distinct from the surface cleansing. I am speaking now of the solid matter that has to be collected and removed by hand.

5717. It has been hitherto the duty of the health officer under those circumstances to get the whole of the population into a cleanly and decent state?—Yes.

5718. Have you any other duties as health officer?—Besides the conservancy of the city I have the superintendence of the markets, embracing the inspection of animals brought for slaughter, the slaughtering of animals, the slaughterhouses, the conveyance of the meat from the slaughterhouses, which are 10 miles from the city to the markets, and also all food in the markets and shops. I have to inspect and to regulate offensive and dangerous trades, as to their locality, conservancy, &c., and I cause the provisions of the Act, requiring sanitary operations on property such as houses and land to be put into force, and I appear against offenders in the police courts. I superintend the registration of births and deaths, and I have the superintendence of different places for the disposal of the dead under me as well. All those duties are under the Municipal Act.

5719. Have you any duties in relation to the hospitals?—It has, I believe, been recommended since I left Bombay that the health officer should have the superintendence of the working of the Contagious Diseases Act, which has been passed before the local government, and is about to be introduced into Bombay, and I shall probably have the superintendence of that under me.

5720. That is the Contagious Diseases Act under the terminology of England, namely, syphilitic diseases?—Yes, I also have power under the Sanitary Act to remove all houseless persons suffering from epidemic disease to a sanitorium.

5721. Shall you have to discharge the duties also which would be imposed in England under the Diseases Prevention Act?—Yes.

5722. That is the Act which is put in operation by the Privy Council here in the case of great epidemics, such as cholera?—Yes.

5723. Have you ever had to deal with a cholera epidemic?—I have had a great deal to do with a cholera epidemic. In 1863 when the cholera was raging in Bombay I have seen as many as 16 people taken out of one hut dead, but I had no power then, I could do nothing except represent, which was no good.

5724. Besides those duties you have, I think you said, the duty of coroner. To whom is assigned the duty of investigating ordinary forensic questions, such, for instance, as chemical analysis in cases of poisoning?—The chemical analyser of the government, and I as coroner would call upon him.

5725. If you were not coroner should you be called upon as being the health officer, or would the forensic department be considered as entirely distinct?—Analysing poisons has hitherto been the distinct duty of the chemical analyser to the government, because he is perhaps the only man in Bombay who has had a laboratory.

5726. What have been the general results of the sanitary operations which you have superintended in their effect upon the population, as to the death-rate, for instance?—In 1864 the death-rate was 30·62 per 1,000, or one death to every 32 persons living; and in 1865, 35 per 1,000, or one death to every 28 persons living. The year following that, after we had been 18 months at work, it fell to 20·65 per 1,000, or one death to every 48 persons living; in 1867 it fell to 18·95 per 1,000, or one death to every 52 persons living; and in 1868, in consequence of cholera being brought in to us from up the country, it rose slightly to 19·20, or one death to every 52 persons living.

5727. Is your registration form similar to that used in England?—No, it is not; our registration of deaths and births is on a most unsatisfactory footing. We have not been able hitherto to enforce any scientific inquiry as to the cause of death, and the consequence is that, though I have graduates of the medical college as medical registrars of death, and they have certainly done a great deal of good, yet still our causes of death are very imperfectly given, and many deaths are returned under the name of fever, which fever was only the most important symptom of the disease which proved fatal, and in the same way many deaths are returned from respiratory disease. Our registration of death is most unsatisfactory, and we are anxious to introduce a better form.

5728. Have you any opinion as to the way in which that registration should be conducted, and who should conduct it?—My own opinion is, that in Bombay, where there has been no medical man attending the deceased, the corpse should be taken to the medical registrar of the district nearest the place of the disposal of the body, who should then make inquiry. Of course the greatest number of those who die in Bombay are not attended by a qualified medical man, therefore I am afraid that at present we

shall not be able to introduce anything better than what I have spoken of.

5729. It is clear that you have had great experience in a vast Indian town, but there are, of course, essential differences between an Indian population and the population of a country like this. I believe, however, you have paid some attention, have you not, to the question of sanitary administration in this country?—Yes.

5730. Probably in a short statement to the Commission you could compare your observations in this country with your experience derived from India; could you now say anything to us in that direction?—I think that all the sanitary laws in this country, if I may with due submission say so, are not calculated to carry out, and have not hit upon the right means of carrying out, sanitary works, and the Indian Act itself is not practically a working Act. If you wish to get sanitary works done there is I believe only one principle to follow. I am speaking about the improvement of a property; whether it is to limewash a house, or construct a privy, or to ventilate a room, the only way to get the work done is to give the owner notice to do that work; if he neglects to do it, then the local authority should have power to summon the offender before a magistrate, who on conviction, should be empowered to put on a daily penalty till such work was completed.

5731. And who is to be the judge of the necessity?—The local authority is the authority of complaint, and the magistrate is to judge whether he makes out his case or not.

5732. Perhaps that is easier with the natives in India than it might be in this country?—I cannot say; but we have one such section in our Bombay Act, and under that one section alone we have been able to do more work than all the others put together.

5733. If I understand your answers rightly they mean this, that the local authority shall be able to judge of the work which is necessary to be done, and shall be able to compel the doing of it by means of a fine?—I myself believe that the local authority in that case should be the health officer.

5734. I used the word local authority to cover the administrator, whoever it might be: if it were the health officer he would be judge in his own department. Now comes the question what should be the duties of the health officer?—The duties of the health officer should certainly in my opinion be executive. I do not believe that there is any good in a man being able to sit down and write a letter and say, "There "is a nuisance, please remove it." That will not do in sanitation. The true thing in my opinion for a health officer is to have the power as soon as he sees a nuisance to go and remove it at once; instant action is imperative in all works of sanitation.

5735. But then the person who is to be this summary judge must be a very competent person?—Truly so, and he should also have tact.

5736. Have you turned your attention at all to the class of persons who should be constituted health officers?—I think they would have to be educated. I am not aware that in any one school at present a health officer can be taught his duties. He has to be especially educated for them.

5737. You do not think that the ordinary education of a curative medical practitioner need necessarily instruct a person in those particulars?—I do not, because he has so much to learn. He has to learn the administrative working of the Act.

5738. You do not of course mean that any intelligent medical practitioner could not acquire this knowledge?—No, certainly not.

5739. But that it is not necessary for his usual duties that he should?—No.

5740. If you were to hand in to the Commission a copy of your municipal Act as it now stands, might we receive it as generally representing your views of what such an Act should contain?—If I were allowed to put in all I wish I think that that Act even yet ought to be more comprehensive. I think that it embraces a great many points, but I think a proper sanitary code ought to provide for all matters connected with sanitation in an extended view. I think that it should provide (1) for water supply, including its collection, storage, filtration, and distribution; (2) for drainage in cities and in rural districts, including the regulation of privies and also sewage irrigation; (3) for general conservancy; (4) for compulsory improvement of all kinds of property and for the removal of all dwellings that were not fit for human habitation; (5) for the registration and regulation of workhouses and lodging-houses; (6) for all points connected with food, markets, slaughter-houses, and the inspection of animals intended for slaughter; (7) for the registration and regulation of bakehouses, milch cattle stables, and all other places where food is kept or prepared; (8) for the registration and regulation of factories and other places where labour is employed; (9) for compulsory vaccination; (10) for quarantine, and for the measures to be adopted for the prevention of the spread of epidemic or epizootic disease; (11) for hospitals, and the inspection of drugs, chemists' shops, and dispensaries; (12) for the registration of births, marriages, and deaths, and particularly of sickness, because I believe that the death-rate is no true test of the health of a place. What we want to know, and what is so very important for us to know, is the amount of sickness that is prevailing at the instant, and also under that head I would include the registration of medical practitioners, midwives, and nurses. (13) For the disposal of the dead and burial grounds; (14) for the regulation of stables, offensive and dangerous trades, smoke, trade refuse, &c.; (15) for the regulation of the width of streets and height of houses, for open spaces and people's parks in cities; (16) for bathing places; (17) for the regulation of contagious diseases; (18) for the analysis of air, food, water, gas, the products of manufacture, &c., &c.; and (19) for the taking of a census. Those are the points which I believe a sanitary code ought to include.

5741. You would not say, I suppose, that most of those points are not provided for in this country in some Act of Parliament or another?—No; but they are all so distributed that I think there is a difficulty in working them. Why should they not all be included in one?

5742. And therefore you would recommend, if possible, a simple consolidated Act containing all matters affecting the public health?—Quite so.

5743. In your opinion should the chief sanitary inspector be capable of seeing to the administration of every part of a sanitary code, or would you suggest different classes of inspectors for the different purposes of the code?—I think that the head officer of a district should be able to superintend every part of that code. At the same time if he found that his duties were too heavy and that he really could not undertake, for example, the analysis of water or food, he should be empowered to call upon an analyst to do so, but as far as possible I think myself that one man could carry out all that work.

5744. That is to say, that one man could, with proper subordinates, superintend a central urban population, as Professor Gairdner does Glasgow and as you do Bombay?—Yes.

5745. And as one person might do large rural areas, such as a county registration district?—Quite so. At present I am unable to conduct analyses in Bombay, as I have not had a laboratory given me, but I hope to do so when I get one.

5746. Can you tell us about what is the cost of this medical administration in Bombay?—I believe that I am allowed about 80,000*l.* or 90,000*l.* a year. In the first year I was allowed from 110,000*l.* to 120,000*l.* but they have been, I am sorry to say, cutting it down gradually, and I am afraid I am not allowed more than 80,000*l.* now.

5747. (*Chairman.*) Is that for salaries or for works?—For the whole establishment, for keeping up the establishment of carts, for taking out the

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refuse, and bringing in meat and everything, the salaries of the inspectors, the payment of 3,000 workmen, and everything else; everything is included in that, and that is for the town of Bombay alone, with a population of 816,562 according to the last census.

5748. How is that arranged; what sort of tax is levied for it?—I am not very well up in the taxes, but I have handed in to the Commission the municipal commissioners' Report, where they are detailed. There are several taxes. The usual taxes are the house rate, police rate, the water rate, wheel tax, and there is the license for professions.

5749. Are there two sets of taxes, one belonging to the presidency, and the other to the municipality?—There is the government tax, which is separate from the municipal tax.

5750. Do all your expenses come out of the municipal tax?—Yes, all.

5751. Both salaries, establishment, and works?—Yes, everything comes out of the municipal fund.

5752. Do they borrow much money for the purpose of public works?—Yes, they have done so.

5753. Would not such a scheme as you have proposed apply to the whole of this kingdom at all events be very costly?—Probably; but you go already to very expensive machinery for the protection of property and for the protection of life, and I say that the protection of health is as important as all the rest, and probably more so.

5754. Would you propose a health officer for every county in England?—I should think so, but I have not considered the question as regards England.

5755. But that was your idea when you answered the question how far your Bombay experience might be applicable to England?—Yes. I should think that there should be a health officer to every particular district. I cannot say whether that district should be a county, that would depend probably upon the amount of the population.

5756. Do you propose that if the principal health officer in anyone district decided that a work was wanted, he should be able to order it?—No, that he should be able to take it before a magistrate who should decide.

5757. Without reference to the Secretary of State?—I believe myself that the reference should be to a Public Health Minister.

5758. (*Mr. Hibbert.*) How do you dispose of your garbage that you take away from the town?—I regret to say that it has been deposited into mounds, and not as we have been anxious to have it spread over the surface of a salt marsh. It is placed upon the salt marsh, whereas if it were spread over the surface it would form a very valuable market garden and be remunerative.

5759. But is it now taken any distance from the town?—10 or 11 miles, or perhaps rather more than that, and out of the island altogether.

5760. Do you get rid of all offensive smells and everything of that kind, and is there nothing offensive now connected with it?—No, not from the street sweepings.

5761. How do you get rid of the night soil?—The night soil is collected by men at the privies, the solid part of which they put into baskets, and they carry those baskets when full to central depôts where the carts stand. Those carts are filled and during the night are removed to and emptied into tanks which are very near the shore, and water is mixed with this stuff and it is allowed to flow away into the harbour at half ebb, and it is a very abominable way of disposing of it.

5762. After being collected it is not sold or distributed in any way for manure?—Not at present, but I hope it will be.

5763. It is thrown merely into the sea?—It is thrown away to waste into the sea.

5764. Is it not very offensive on the shore?—Yes, it is.

5765. Is it brought back by the tide?—It is run now into the deep sea at half ebb, and therefore it is not so offensive as it used to be; but of course it is a very unscientific way of disposing of it, and I trust we shall be able to turn it into profitable manure. I am now engaged with some gentlemen in Manchester in investigating and inquiring whether it would not be possible to turn it into profitable manure, to place it in gunny bags and send it up the country and put it over the cotton fields.

5766. (*Lieut.-Col. Ewart.*) What is the central administration at a presidency in India for sanitary purposes; is it not under one of the secretaries to the government?—There is a sanitary commissioner in Bombay who reports direct to one of the secretaries of the government; he is the military sanitary commissioner.

5767. By whom are the sanitary works carried out in India, by whom are the plans prepared, and by whom is the work executed?—In Bombay, as far as I know, generally speaking by a government officer, of the Royal Engineers.

5768. And all plans would be approved by the central government, would they not?—All plans are sent to the sanitary commissioner, who supervises them, and if he disapproves of anything in them, he returns them to the executive engineer who has sent them to him, and then they are sent back, and if the sanitary commissioner approves of them they are laid before the government, who pass them.

5769. Do you not think that that system tends to ensure due care being taken that proper sanitary principles are carried out in those plans?—Yes, probably it does.

5770. Speaking in general terms, without going into particulars, on what principles it is contemplated to drain Bombay?—To separate the rainfall from the sewage, and to apply the sewage to the land.

5771. You have great difficulty in India, have you not, on account of the rainfall being intermittent, and coming in a great quantity at one particular season?—Yes, during three or four months of the year we have very great difficulty.

5772. Have you had any experience in the important experiments which have been made in India with the dry-earth conversancy?—No, I have not had personal experience; I have not been in Bombay since it has been introduced.

5773. Are you aware whether the result has been that they are considered favourable to adoption in large towns?—I believe myself that it is perfectly impossible to adopt that system in large towns. It certainly would be in Bombay, where we are on an island, and where all this earth wou d have first to be brought into the city and then to be taken out of the city, and during the three or four months when we get from 79 inches to 85 inch[s] of rain it would have to be stored under cover, sothat it would be perfectly out of the question.

5774. Have you tried the use of disinfectants to any extent?—Yes, very lare gy. I took out first of all Macdougal's preparations to India, and I got them introduced, I think, into the Indian army, but I certainly have used them myself very largely indeed in Bombay.

5775. Is there any medical sanitary system of inspection in the rural districts in India?—I regret to say that, as far as I am aware, there is none. In the event of an epidemic disease breaking out, or in the event of there being a large pilgrimage, medical officers are detached to those particular points, but there is no regular systematic inspection which we want.

5776. You have no system similar to what the French have introduced into Algeria of having medical officers for districts or circles?—No; for example, in Bombay I can stamp out my own cholera, but I am powerless to prevent cholera, which has originated 200 or 300 miles from me, being brought in to me. There are three lines of railway, and I have not the power to prevent it, and the Government has not power at present under the local Act to prevent passengers ill with cholera coming down into Bombay,

and then they come down and form centres of cholera. The death-rate went up last year partly in consequence of cholera which was brought down into the city after I left India in July last. I think there only had been as few as eight cases during the preceding five months, and then suddenly the cholera was brought down into Bombay, and it spread at once, and Dr. Lumsdaine, who is acting for me, could not stop it, and until we get mofussil sanitation, that is, sanitation up the country, there will be no hopes of stopping its importation, or its spreading in Bombay when imported.

5777. (*Sir T. Watson.*) You have expressed your opinion of the great importance of registering the causes of diseases as distinct from deaths, do you think that it would be feasible to have any full or trustworthy registration of disease throughout the country?—I can of course only speak of the registration in Bombay, but I think that all medical officers for dispensaries and unions, and all medical practitioners, might be bound to send in to the health officer of a district, weekly, a roll of the cases that he had had as simple and short as might be practicable.

5778. There would be no difficulty probably in getting such returns from hospitals, infirmaries, dispensaries, or other asylums of that kind, but do you think that those returns would sufficiently indicate the presence of disease in the community without requiring returns from individual practitioners?—I do not think that they would be particularly trustworthy for statistical purposes, but I think that they would give the health officer immediate notice. It is so necessary for me is to know at once when a case of cholera occurs. I have my men all through the town, and as soon as ever there is a case of cholera that place and all the houses round are disinfected, all the privies are disinfected, the man's room is disinfected, his bedding is disinfected, and therefore I believe in that way we are able to stop the spread of the disease.

5779. You would be likely to get that information from those public institutions?—Quite so, and from private medical practitioners, if they would only send off at once as soon as they were attending a case of cholera.

5780. But that might be made imperative upon the institutions might it not?—Yes, and I think it should be made imperative upon the institutions.

5781. What you have just been saying explains the method you adopt for stamping out cholera?—Yes. As soon as ever I hear of a case of cholera, which I soon do, because my establishments are in every street, gully, and back lane, in Bombay, I have a crowd of my men there with disinfecting powder, and with cholera mixture, and the whole place is limewhited inside and out, and all the drains are cleansed, and disinfecting powder at once spread all around the place.

5782. And do you find that effectual?—I do.

5783. Have you made trial of any other disinfectants besides those you have mentioned, Macdougal's?—No, I have not beyond chloride of lime; I have used that occasionally.

5784. Have you used Condy's preparation?—No, it is too expensive.

5785. Or carbolic acid?—I have used impure carbolic acid and mixed it with lime and with water. I use carbolic acid, for example, in my night-soil carts to prevent fermentation.

5786. Have you much scarlet fever in Bombay?—No.

5787. Did you ever know of any there?—None.

5788. You mention cholera mixture, is that a mixture for the suppression of diarrhœa?—Yes, principally for the suppression of diarrhœa. We find it so important at once when a person is ill with diarrhœa to give him something that will stop it.

5789. Is it something of an astringent kind?—I think it is. I am not quite sure of its composition, but it was one that was drawn up by a very eminent medical officer, Dr. Leith, who was the late sanitary commissioner, and there are instructions printed on each bottle, both in Maratha, Guzerati, and Oordu, as well as in English, as to the quantities that are to be given at different ages. We find it an exceedingly valuable agent in that way by giving it to all the police stations, and my men have it so that we always carry it about with us.

5790. You know whether it constitutes what is called the eliminative treatment?—No, it is not eliminative.

5791. (*Dr. Stokes.*) In Bombay do you consider that the causes of cholera are from contagion, or is it self generated in the town?—I believe it may be both, and I believe it has been both. I do not know what the causes of cholera are yet, but I believe that it has generated itself in Bombay at a former time, and I believe that it has been brought down into Bombay in very large quantities, and that is now our only point of fear.

5792. Of the two causes do you think that importation is the most important?—Yes, it is the most important to us now as long as these organized health services last.

5793. Have you any other important epidemic besides cholera in Bombay?—No, except small-pox, which we have had to a very large extent.

5794. Has inoculation been practised?—It has been, but it is now punishable by law, and it is not carried on to any very great extent at present.

5795. In the cases where it is brought before the cognizance of the law who is the informant?—The policeman generally.

5796. Not the medical attendant?—No, the government vaccinator would report any case that came under his notice.

5797. Do you consider that the alleged causes of disease in a great city like Bombay, namely, bad ventilation, bad water, bad drainage, bad smells, are in themselves the causes of epidemic disease, or is the objection to them that they render the population more susceptible to imported disease?—I think that all those causes that you have enumerated must render any population more liable to the attack of disease if it is floating about.

5798. But still the alleged source is constant, and the effect is inconstant?—That is true: but I believe that the atmosphere becomes in a septic condition at intervals.

5799. (*Chairman.*) Will you have the goodness to hand in the Bombay Act to which you have referred?—Yes (*delivering in the same*).

The witness withdrew.

(45). Joseph Rankin Stebbing, Esq., examined.

5800. (*Mr. Russell Gurney.*) You are an alderman and magistrate of the borough of Southampton, are you not?—Yes.

5801. What is the population of Southampton?—It is estimated at the present day at 52,000.

5802. The area is very considerable, is it not?—The area is upwards of 800 acres. Perhaps I may be allowed to explain that. Southampton, where the sanitary measures are in operation by the local board of health, includes six parishes, but exclusive of the tything of Portswood.

5803. The corporation is the local board of health, is it not?—Yes.

5804. Do not their powers extend over the whole borough?—I believe in the strict legal sense they do, but in practice the tything of Portswood has been excluded.

5805. That is rather a populous place now, is it not?—The town of Southampton including the six poor law parishes (which form one union) at the last census had 43,414 inhabitants, without the people in the ships, and the tything of Portswood had 3,546.

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5806. Had you a severe outbreak of cholera in the year 1866?—Yes, and previously at the latter end of 1865.

5807. Were the powers of the corporation entrusted to a committee of the town council?—Yes.

5808. And you were the acting chairman of that committee?—Yes, in 1866 I was.

5809. Did you find that the powers which you possessed were sufficient for the purposes which you had in view then; I mean those entrusted to you as the local board of health?—Quite sufficient, except that there was some difficulty in applying the law, which I will presently speak about.

5810. Had you not to have an order in council at that time, giving you the duties of the poor law union in addition to those powers which you previously possessed?—Yes.

5811. Did you find it necessary to obtain that?—No, there was notice after the cholera had occurred, from the Privy Council for the poor law union to put the Diseases Prevention Act in operation. We had before that been applying remedial measures, and it was a question whether we should cease our action, and pass the work over to the poor law union, or whether the poor law union should give it up altogether to us, and we applied to the Privy Council with the consent of the poor law union, and carried on the preventive measures and the remedial measures, which we had commenced.

5812. Then the powers of the poor law union were transferred to the committee of the town council?—Yes, by an order in council.

5813. Was it under an Act of Parliament that the powers of the town council were delegated to a committee?—The Privy Council have power by law to give the duty to any authority, and it was given to us under that power.

5814. Have you not a local Act?—We have a local Act.

5815. And have you considerable powers under that Act?—Yes, I do not think that without that local Act we could have done the preventive work that we did.

5816. Did you find it absolutely necessary to have a controlling authority?—Yes.

5817. And the administration was practically placed entirely in the hands of a committee of the town council?—Quite so. We did as a matter of courtesy elect six guardians to sit with us, and they were very ready to assist us in any way, and they did assist us in some details, but they did not take any part in the proceedings.

5818. Was the committee appointed under your local Act, or under the general Act, or under the order of the Poor Law Board?—It was a committee of the local board of health, the town council being the local board. It stands just thus: At the present time, there being no epidemic, the local board takes charge of the health of the community, but when an outbreak takes place of an epidemic, or any other serious form of disease, then the poor law guardians have to cure the people. That is in a few words what is the state of the case. We have to prevent their being seized with any disease, and when the disease comes the poor law guardians have to apply the remedy, that is to say, to apply the Diseases Prevention Act.

5819. Have you found any inconvenience to arise from that?—We did not know that we were subject to the interference of the poor law union. We thought that we had to deal with disease before it came, and when it threatened. So that when it did come we were engaged in applying the remedies. At that crisis the Privy Council sent down an order to put the Diseases Prevention Act into operation. We then considered what we should do; we must either give up our good work, which we were doing well, or else we must hand it over to the poor law guardians, as a new subject for them in the midst of the visitation.

5820. Do you think it very desirable that there should be one controlling authority which should have the power both of preventing and curing?—Most decidedly. In towns I believe it never will answer without.

5821. What were the measures that were taken at the time of this outbreak?—We had a visitation of cholera in September 1865, which was very severe, and the officer of health died with the cholera himself. From the winter coming on, or some other cause, or owing to the remedies that were applied, the cholera ceased; we then elected a new officer of health, with larger powers, and with a larger staff. He went round the town, and he told us plainly that the state of our courts and alleys and sewers was such that we were certain to have cholera or some other outbreak of disease as soon as the summer came on, and we believed him, and we prepared for it.

5822. How did you prepare for it?—At this time one of our principal sewers was stopped, and it was a very awkward thing to open it at such a time, but as the warm weather came on we opened the sewer, we were obliged to do it or else stand the chance of having the sewer stopped during the anticipated epidemic. We opened the sewer and used carbolic acid profusely, but we had great trouble to get the men to use it who opened the sewer. It is an interesting fact that none of them had cholera, and it was by force that we made them use it; they got so angry with the smell and the compulsion that they called it the diabolic acid—that was the common name of it with these people—and they moved the sewage matter with such carelessness that we summoned one of our own people before the magistrates to punish him for not obeying his instructions. Then we watered all the courts and alleys with diluted carbolic acid. We had had in September the most complete house-to-house visitation perhaps that ever took place. We had a medical man, a member of the borough council, and some other person to go round the districts, and there was not a house that was not inspected in every detail. They made a large amount of clearance then, and when the cholera was anticipated in 1866 we set to work in removing those germs of disease, which were reported by that house-to-house committee. The surveyor removed 400 nuisances in the course of four or five weeks; the officer of health removed a great number, and the inspector that he had with him. We have at Southampton four inspectors, inspectors of water not only to see that they do not waste, but that they have it for proper use. We doubled that number, and made them also sub-inspectors of nuisances so that we had every house in the town in our grasp. We remedied as rapidly as possible everything that we thought would contribute to disease, we got the sewers cleared, we got those nuisances removed, we used carbolic acid in watering the courts and streets and alleys, we put lime in the gullies, and used it in the most profuse manner, and spent a very large sum over it, thoroughly filling the town with the odour of carbolic acid in fact.

5823. Notwithstanding this the cholera came?—Yes, in the month of June 1866.

5824. What further steps did you take when it actually did break out?—When it did break out we organized a very extensive medical staff. Within a few weeks we paid as much as 873*l.* 18*s.* 0*d.* to 13 medical men. All the districts that were threatened were at once inspected by a medical man having an assistant and medicine with him, and they also became inspectors of nuisances from the zeal which they took in the matter, and they made further reports to a sub-committee, over which Dr. E. A. Parkes, of Netley, presided, and the mayor (Alderman Emanuel) and I attended.

5825. Were all the sick visited?—Yes, all the sick were visited by medical men, and when the visitation came upon a street the medical man visited every house in the street, and the sanitary committee visited those houses and mixed a good deal with the sick, and with the dying, and taught them the advantage of sanitary measures.

5826. Was there very great alarm at first so as to prevent that being attended to?—No we very soon overcame their fears.

5827. There was that fear at first?—Yes, there was that fear at first.

5828. Was that very much removed by the members of the committee always visiting the sick themselves?—Very much indeed.

5829. Then they were thoroughly attended to?—Yes.

5830. What was the number of cases that you had during the time of the epidemic?—We had 320 cases, and we had 100 deaths from cholera; and 53 from diarrhœa.

5831. How many cases of diarrhœa did you have?—It would be impossible to say.

5832. Was it a very great number?—I should think so by another circumstance. We opened a public dispensary with reference to the poor, and to give the Commission an idea of the extent of diarrhœa we supplied the public with 7,887 doses of medicine.

5833. I suppose with the close inspection that you had, you had instant information of any premonitory symptoms?—Yes. Only in one month the medicine supplied by the dispensary during the epidemic from the 16th of July to the 16th of August, that is 32 days, amounted to 7,887 doses. Then the poor-house patients had 472 doses, making 8,359. At the Council Chamber we kept medicine where people had it for nothing, but we kept no account of that, and the public dispensary of the town dispensed medicine gratuitously, and of that we have no account, but the diarrhœa must have been very extensive, because we registered the taking by the people of 8,359 doses in 32 days.

5834. Did you find by your early measures that in the great majority of cases the premonitory symptoms were attended to and they did not come to anything worse?—No; at first about two out of three that were taken died, but afterwards the proportion of course was more favourable.

5835. In the great majority of the cases it never came to cholera I suppose?—The great majority never came to cholera. I should say that I think a good many of those 53 diarrhœa cases were cholera cases. I think half of them were cholera cases. At first when there was any doubt upon the subject we had a good many battles with the medical men to get them registered as cholerine, choleraic diarrhœa, and all kinds of substitutes for the plain word itself.

5836. There was a great desire to prevent people not being deterred from coming to Southampton during that season, was there not?—Yes.

5837. You had an exhibition going on at the time, I think?—Yes; it destroyed our exhibition of course. We quite satisfied the public mind that it was not a contagious thing, and they, *i.e.*, the townspeople, had no fear of it after a little time; but strangers kept away.

5838. I believe you were a very constant visitor on those cases, were you not, yourself?—Yes, I was five weeks ill with diarrhœa from anxiety myself, but I kept at my post until at last I could hardly stand, and then I went away for a few days. I had no fear of contagion myself.

5839. Did you come to the conclusion yourself that it was not contagious from the facts that came under your notice?—Taking what science teaches in the way of precaution I had not the slightest fear; in fact I proposed to the committee that we should take turns in sleeping in the hospital when things got very bad.

5840. Was that the opinion of the medical men generally also?—In my experience it is very difficult to get an opinion from a medical man on that subject, but I think they rather inclined to that view. We lost our officer of health in 1865, under very trying circumstances, he had worn himself out in the duty. He probably would have died from something else, he was perfectly exhausted from his labours.

5841. Where there any nurses who died?—No nurses died.

5842. Or any of your inspectors?—None of them. The instructions that we gave them were not to drink out of the same vessels, not to get the vomit or dejection upon their person, to destroy the clothes as soon as possible, to put carbolic acid or Condy's fluid in the vessels used, and they had ample access to it, and by those kinds of precautions we made all the poor people nearly, have some idea what they were to do to avoid spreading the disease.

5843. Did you find that there were any powers that you wanted which you did not possess?—Yes, we had one difficulty and it still exists, namely the power to close privies. We are a very well sewered town and a well watered town, we have only 74 privies in the town, by which I mean what is commonly called a boghole, that is a place without a pan or a syphon or a supply of water, but merely an open receptacle, and we feel that the health of some parts is now affected by those privies. Our officer of health thought that he could close them, but I was obliged to stop him, because I said if I were on the bench I should not, as a magistrate, convict a man under the present state of the law for having a privy unless we could be certain of its being proved a nuisance, and we cannot go that length.

5844. Is there any other power that you felt you wanted?—We wanted the power to deal with pigs. The difficulty now is that you must have the evidence of the neighbours that there is a nuisance, and then what one man calls a nuisance another would not, and neighbours do not like giving evidence against each other. We found in our visitations donkeys, ponies, and pigs in one instance even kept in bedrooms upstairs; we found the strangest things in their carelessness with regard to health, a sort of happy association with a pet animal or a useful one.

5845. Have you not any provisions in your local Act respecting that?—If it were not for our local Act I do not think we could keep the town in health, I will leave the local Act with the Commission if they will permit me (*delivering in the same*).

5846. What is the date of your local Act?—1844. It is the 7th & 8th of Victoria; it is nearly all repealed, but there are some good points left.

5847. How do you mean, that it is was nearly all repealed?—I think when the Public Health Act passed many of the provisions of our Act were repealed. If you will have the goodness to observe all those marked in black are repealed, but if you turn to page 106, this is what I call the salvation of Southampton, it is part of the 274th section, and it says, "Every person who shall place or keep any "offensive matter in any inclosed or open ground "within 100 yards of any dwelling house, so as the "same may become a nuisance or annoyance to any "inhabitant," then there is a general term that for that and many *s.*ther offences therein specified they shall be fined 40*s.*

5848. I see that there is also this provision, "Every "person who shall keep any pigstye or any swine, "in or near any street, or in or near any dwelling, "so as to be offensive to any person."—Then we must have a person to give that evidence, and a neighbour will not do that. And then some will say that a pig is a nuisance, when really it is not, and others will say that it is not a nuisance when it is extremely offensive to people.

5849. Do I understand you that but for this local Act the powers that you have as a local board of health would not have been sufficient for your purposes?—They would not, for we should have had notices to give and to go before the magistrates first, or to go before the board of health, or to get the signature of the clerk to the local board, and we should have had the disease extending, and instead of the nuisance being removed in the meantime it would go on festering and producing increased mischief.

5850. You mean that at the time of the outbreak you wanted all the summary powers that you had under the Public Health Act?—Yes, I was requested by the town clerk to say that if the Commission felt

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that they could do it, it would be a great boon if they could strike out the words in the third line in that clause 274 from the word "house," "so as the same "may become a nuisance or annoyance to any in- "habitant." I venture to ask the Commission to take this view of the matter as a great sanitary question. Then we want our officer of health, who is a gentleman and a scientific man, and a medical man, who is supposed to be above anything that would be oppressive or unjust, to have the same power which is given to the landlord of a house, or the ground landlord of a house, who can come into your house and go all over it, and see that it is kept in repair, and that power is never abused. I say that the officer of health, if he thinks that a house is unfit for habitation, or that there is a nuisance, or that the drains are out of order, or that there is an insufficient water supply, should of his own mere motion go there and demand admittance, and then go to the magistrate and have the subject dealt with.

5851. You do not mean that his decision should be final?—No, I would have the protection of the law.

5852. Is not that the case now?—No, he cannot enter a house. If he supposes that it is unfit for habitation he must go and get the magistrates' authority, and in other desirable points of inspection he cannot go in without notices, and a machinery which in reference to the health of a town produce a great deal of delay.

5853. The only additional power that you wish to have given him is that he should have power to enter a house where he believed a nuisance to exist in order to see whether there is a sufficient case for calling in the aid of the magistrate?—Quite so. Then he would give notice if it is not removed, and the penalty would be applied for, and if the offence were proved the penalty would be inflicted.

5854. Do you have cases of yellow fever at all in the passenger vessels in Southampton?—We have had several cases of vessels coming up with yellow fever, and then they are placed in quarantine. We have had no doubt, although it has been kept very quiet, a few cases of yellow fever that have been landed. Persons either landing with it, or with the seeds of disease in them, and it has developed itself afterwards.

5855. Has it ever spread at all in the town?—No.

5856. But they are only imported cases?—Only imported cases.

5857. What are the restrictions with respect to the landing of passengers who are supposed to have yellow fever, or of passengers in ships where others have had yellow fever?—It is very objectionable as it stands at present, because if there is no disease on board, but if there has been within a certain time, the ship is liable to be placed in quarantine, and the case cannot be dealt with without reference to the Privy Council, which causes delay, and we object to that very much indeed. It is no doubt a great international question, and possibly this Commission may not go so far on the subject as that, but we think that the local authority and the medical officer of quarantine, and say the collector of customs, should have power to deal with those cases.

5858. How do you mean that they are to deal with them?—To let the passengers land, and not interfere with the comfort and convenience of the passengers unnecessarily, nor restrain commerce.

5859. In that case the town would be put in quarantine, would it not, with respect to all foreign ports and ships going from you?—No, because we do not believe that the disease would develop itself. We have our own wives and families there, and we are best able to protect ourselves.

5860. But foreign nations are not so satisfied upon that point as you are?—I know that the international question stands in the way, but I am sure that the medical science of England does not stand in the way. It is perfectly impossible that yellow fever can extend in northern latitudes.

5861. Were you able to trace where the cholera came from which came to you in 1865 and 1866 in any way?—No, the origin of the cholera both in 1865 and 1866 was very mysterious. We devoted a great deal of attention to it and went to great expense. In 1865, the first case was a bargeman who was engaged in throwing some offensive mud out of a barge or into a barge, I forget which, and on the day he died in Brewhouse Lane, which is at the lower part of the High Street, another person who had no connexion whatever with him—at least no acquaintance, or contact, or association could ever be traced—died in Kingsland Place, which is about three-quarters of a mile away. Then in 1866, the first case was landed from a packet ship, at least it was not landed from a packet ship, but it was consequent upon the landing of a sick person from a packet ship. The circumstance were these a man had died on board the packet ship on the Saturday (and she arrived on Sunday) of something of a choleraic character. I went down as the local authority to investigate this, and after questioning the medical officer a good deal we got him at last to write down some designation to the disease, which was not thought strictly cholera nor had been so treated, and which justified our letting the ship come into the docks. The man who nursed the person that died went on shore on Monday and slept with his wife and a little girl between eight and nine years of age, or she came to the bed to him in the morning. The man had cholera and got better, the child got up perfectly well, had its breakfast, was playing about the room at half-past 9 and at 2 o'clock was dead. That was the first case. I was a little uncomfortable about having let the ship come into the docks, but the same day and the same hour, at a distance of about half a mile, at a place called Charlotte Place, a little girl of about the same age, after a similarly short period of illness, died also.

5862. Had there been any communication between them?—Not the slightest. We paid the greatest attention to this case. I felt a little personal uneasiness about it thinking that I might be blamed perhaps for a little want of caution, but we never could trace the slightest communication at all between the cases, and at Charlotte Place she was the only person that died. So apparently we should have cholera without the packet ship case.

5863. Then did it immediately spread generally through the town?—No; the first cases of cholera and choleraic diarrhœa were on the 18th of June, and the third case was on the 6th of July.

5864. Have you had your attention directed to the Contagious Diseases Act?—Yes.

5865. Is there any anxiety to have it extended to Southampton?—Very much indeed.

5866. (*Mr. Powell.*) I understood you to say that in the case of Southampton, the Diseases Prevention Act had been put in force?—Yes.

5867. You also stated that under that Act the board of guardians are *primâ facie* the authority?—Yes.

5868. But that the Privy Council, under the 11th section of the Act of 1860, has power to constitute any other body the authority, do you mean that the Privy Council have made the committee of the town council the authority?—Yes, by an order in council.

5869. Has your attention been directed to the fact that under the Nuisance Act, the local authority or any of their officers, where they have reasonable grounds for believing that a nuisance exists on any private premises, may demand entrance?—Yes, that is as to nuisances.

5870. Does not that appear to you to be a sufficient power of entry, having regard to the desire which we all have to preserve the utmost sanctity of the dwelling?—No, because houses may be unfit for habitation, and there we have no power at all of entering except by going to the board of health and having some machinery put in motion.

5871. Then your wish would be that they should have the power of entry without obtaining authority from a justice?—Yes; or that the board of health, or the committee, or the officer of the committee

should be able to do that by his own sense of what was necessary for the health of the town.

5872. Do not you think that great resistance would be shewn on the part of the inhabitants to that interference with their domestic privacy?—No, we do a great deal of our sanitary work by doing it in a pleasant way, rather assuming the power as possessed than we do by the actual exercise of legal authority.

5873. It comes to this, that if giving you more severe power produces resistance on the part of the inhabitants, you would be in a worse position for carrying on sanitary reform than you now are?—Now, if they resist us, they give us a great deal of trouble. There will be in all communities some disagreeable people who will resist authority and give a great deal of trouble. Perhaps the Commission will allow me to state shortly the difficulties that we find in carrying out sanitary measures By the Nuisances Removal Act a great deal occurs in dealing with nuisances requiring immediate removal; for instance, section 11 of the 18th and 19th of Victoria, chap. 121 requires an order for any officer to enter premises where parties refuse admittance, and before such order can be obtained the nuisance in existence may have caused much injury. That is one thing. When in dealing also with houses unfitted for human habitation the officer of health has no summary powers, but has to give a report first to the local board, and then to obtain their permission to proceed, and he can only do so through the clerk of the local board signing the necessary notices. These different stages occupy from a week to 10 days. The existence of privies, which are allowed by the wording of the Public Health Act, the 11th & 12th of Victoria, chapter 63, section 57, is a fruitful source of disease, especially in towns where they should never be allowed to exist where there is a regular system of sewerage. By privies I mean those commonly called bogholes, which are nothing more or less than open cesspools. We have no objection to privies if they had syphon pipes or traps, because a lot of water would cleanse them.

5874. I presume that the Nuisance Removal Acts are in full force in Southampton?—Yes.

5875. Have you not found some of those Acts in some respects more efficient than your local Act?—No; almost exclusively we use our local Act.

5876. Have you compared the two carefully, and have you arrived at the conclusion, after comparison, that your local Act is better than the Nuisance Removal Act?—Yes; because when we go under the Nuisance Removal Act, we get beaten either by delay or by legal difficulty, whereas when we go under our own Act we get an immediate remedy. The public are afraid of our Act, but they do not much mind the other.

5877. (*Sir T. Watson.*) You observed that it was noticeable that the persons who were employed in opening and cleansing the sewer escaped the cholera; was that before the cholera had arrived?—I think it was during the time that it was present, or very close upon it.

5878. You also said that in your belief a great number of cases of diarrhœa never advanced to cholera at all. Were you speaking then of cases of diarrhœa in persons who had taken some of the medicines which were prescribed for diarrhœa generally?—I assumed that if 8,000 odd people took the medicine they took it for incipient diarrhœa or confirmed diarrhœa, but then we had 53 people who died of diarrhœa.

5879. When you say that in a great many cases diarrhœa did not go on to cholera, do you limit that statement to those persons who had taken the medicine?—No, I refer to the population generally.

5880. (*Mr. Whitbread.*) It would be necessary, would it not, to fence round very carefully the power which you propose to give to the health officer to enter houses?—There would be the check of public opinion, and a popular body like the local board of health, if he misused his power, would either dismiss him or check him so that I think no harm would result from his having that authority.

5881. Do not you think it would be necessary to enact that you should only go in when you had reasonable cause for suspecting that there was something inside that was injurious to health?—Then he would go in at a personal risk, probably of an action, and he would omit doing his work, or it might be thrown upon him to show what cause he had for suspicion.

5882. Would you allow him to enter a house in that way, on his own authority, without reasonable cause, and without recording the grounds upon which he went in?—He would have to report to his committee, no doubt every visit, and that is done now; the visits of the officer of health are very constant, his attention being frequently called by the inspector of nuisances. In fact we have a weekly inspection, or at all events a fortnightly inspection now of all our houses in one form or the other.

5883. (*Mr. Hibbert.*) You say that you wish to get rid of the privies in Southampton; are there ashpits connected with the privies there?—No, they are dug out of the earth, they are what are commonly known as bogholes, they are separate from ashpits.

5884. Have you not in some houses the privies and ashpits which are common in all other towns?—No, we have a separate place for ashes; a contractor goes round to take the refuse away every week, at all events they are quite distinct from ashpits. They are like the common garden privies which you see in rural districts.

5885. What plan have you in operation in Southampton, is the watercloset system throughout?—Yes.

5886. In connexion with cottages?—We have mostly rows of streets. We have hardly a cottage in the sense of a cottage with a garden to it. They are mostly rows of streets, some with a little garden before and some with a little garden behind.

5887. What kind of places have you for the cottage dwellings, are they waterclosets or privies?—They are not waterclosets in the sense of having a pan with a pipe from them, but they are waterclosets in the sense of having a cistern over the pan with a syphon under it, so that there is the means of washing them through when used, or in some cases where the water is not on, which it is not in many cases, a bucket of water cleanses the place.

5888. Where does the excreta go?—Into the sewers of the town.

5889. Where do the sewers discharge themselves?—The sewer at present discharges a little way up the river Itchin, but in consequence of the objection to discharging so much sewage so high up the river, and also in consequence of the desire to get it nearer to the tidal stream, we are just constructing, and have nearly finished, and it will be open in a few weeks, an immense tank against the platform near the quays, where we shall retain the sewage matter and the storm waters during high water, and then when the tide is falling its gates will be opened, and it will rush off down the river, by which we shall relieve very extensively the present sewer outlet.

5890. Is this tank nearly in the centre of the town?—No, it is facing the sea, it is half way between the Royal Pier and the docks. I will leave with the Commission a plan of the town showing where the outlets are and where the cholera deaths occurred. (*The witness produced a plan and explained the same to the Commission.*)

5891. Has this mode of discharging the sewage been examined by any government inspector and certified in any way?—Our works were first of all approved by a government surveyor, or else we could not borrow the money.

5892. Therefore he has certified this plan of discharging the sewage?—We submit the plan on which we are going to lay out money, and there we get power to borrow money to carry it out.

5893. (*Earl of Romney.*) When this reservoir is made will there be no sewage discharged into the

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Itchin?—There will be some, but not to a large extent.

5894. Through your sewer, or what?—Through the mouth of the large sewer.

5895. Do you intend that to continue?—We intend it to continue until we hope some arrrangement will be carried out by which the sewage can be utilized. We have had some parties in communication with us proposing to take the sewage for a period of years, giving us nothing for it, but taking it from us, and if that was so this reservoir would be of very important value to the speculators or company.

5896. Does mud go up the Itchin?—There is mud on each side of the Itchin.

5897. (*Chairman.*) When you said that your local Act was nearly all repealed, did you mean that that was done by the general Acts, or have you a local Act partly repealing it?—There is no local Act repealing it; it is the general law of the land that repealed all those clauses, as far as my memory carries me.

5898. You are of opinion that if you adopted all the powers which the general Acts would give you you still would not have the same power which you have by your local Act?—Certainly not.

5899. So that you would not be satisfied in the process of consolidating the general Acts to give up your local Act?—No, we should not.

5900. You think that you get more power, and also in a better way by your local Act?—Yes, certainly.

5901. At this moment is not the law rather indistinct, because your powers are partly under the local Act, and partly under the general Acts?—We are under a very great difficulty, in consequence of the number of Acts of Parliament, and the various clauses, some apparently inconsistent with each other, and we should be very glad to surrender our local Act and also our byelaws, if the Government would pass a general consolidated Act, which would embrace all the good points of those various powers.

5902. You would think it a very great advantage to give up your local Act if there was such a general Act passed?—Clearly so. We find our byelaws troublesome, and our local Act you see is cut all to pieces, and if the Government would consolidate the law relating to nuisances, we should consider it a great boon.

5903. Do I rightly understand that the committee of the town council, which you said were formed by an order in council, was merely for the occasion of the cholera, and ceased after it?—No, it is in existence now; but in case of another epidemic so much of its duties, formerly exercised under the Diseases Prevention Act by that order in council, would legally vest in the guardians of the poor, unless another order in council gave power to this committee as before.

5904. Is all the organization that you created during the presence of cholera still existing?—The same organization, but not with so many ramifications or not with such long arms. For instance, we have four water inspectors instead of eight; we have a very active officer of health, Dr. McCormack, and he makes quarterly reports; we have an inspector of nuisances, who makes frequent reports to the officer of health. We employ the police to make reports of nuisances which come under their attention when going out on duty, not to find them, but to report them when they come under their attention, and the water inspectors, when they go round to prevent the water being wasted, also make reports of any nuisances. That is carried on at the present day, and we propose to continue it.

5905. Then the police co-operate with your inspectors?—Yes.

5906. Can you tell me what salary you give your principal officer of health?—We give him 150*l.* a year.

5907. And he has agents under him?—Yes.

5908. Are any of those agents medical men?—No.

5909. Has he a private practice besides?—No; he is a surgeon in the militia, and a gentleman of some private means; he is debarred from private practice; that was our advertisement; we got a good deal scolded in the "Lancet" about it, but that was our advertisement—to have a medical man who should not go into private practice, thinking there might be many gentlemen who would take an interest in this kind of work without making it altogether a matter of profit, or consideration of large salary.

5910. Does the same body which governs the town govern the ships also?—No, that is a very great difficulty.

5911. What authority is there over the ships in the harbour?—Under the order in council and under the Act of 1866 a ship is made a house for the purpose of sanitary matters, but we should feel great difficulty in dealing with a ship that came up with cholera, first because the ship is not within the borough, although there is a clause that gives the borough authorities control over it within a certain distance from the town or parish, and the other is that the people of the place could claim to deal with the ship in a strictly legal form if there were an outbreak of cholera on board. The Act of the 29th & 30th of Victoria, chapter 90, section 32, says: "Any ship or vessel lying in any "river, harbour, or other water, shall be subject to the "jurisdiction of the nuisance authority of the district "within which such river, harbour, or other water is "and be within the provisions of the Nuisances "Removal Acts, in the same manner as if it were a "house within such jurisdiction, and the master or "other officer in charge of such ship shall be deemed for "the purposes of the Nuisances Removal Acts, to be the "occupier of such ship or vessel; but this section shall "not apply to any ship or vessel belonging to Her "Majesty or to any foreign government." Now we have sometimes upwards of 1,000 emigrants that come on board foreign ships into our port in a week, and how to deal with them would become a very embarrassing matter; first of all whether they are within our jurisdiction, being foreign ships, and because another clause in this very order in council speaks of their being under the control of the nearest authority. Now is the poor law union that authority?—It is a question what is the authority of the poor law union—whether it is the place where they sit or the circumference that they strike. On one side of the river is the New Forest union, on the other side the Stoneham union; the ships are often nearer to their boundary than to Southampton, at the head of the river, with its union. And if a large quantity of shipping came up the harbour it would be very embarrassing, with this serious consideration to Southampton, that the present law imagines that those who are well and have undergone a medical examination may be landed, and those that are sick should be placed in some hospital. But the moment we land a person with cholera we place every ship from Southampton in quarantine all over the world, and very seriously affect the packet service of the country. Then if we undertake this duty we respectfully submit to the Commission that the ports should be specially dealt with, with regard to the arrival within them of vessels having cholera on board. You cannot put them in quarantine; it is a very unsafe thing to land the passengers, and it is a serious thing to keep them out in the water with the germs of disease on board. We had only one case of cholera from a ship during our visitation, and that we put in the Æolus hulk, and the man was cured; but it is a very heavy expense for the town. Perhaps I may be allowed to read this section in the order in council which must be read, I suppose, with the Act of Parliament. The order in council of the 10th of January 1867, after a recital of the Diseases Prevention Act and other orders says, "Now therefore "the Lords of Her Majesty's most honourable Privy "Council do hereby in exercise of the powers given "by the said Act, and all other powers enabling them "in that behalf, order and direct that the provisions "contained in the said Act for the prevention of "diseases shall from and after the date of this present "order be, and be continued in force within the whole

" and every part of England and all parts and arms of " the sea lying within the jurisdiction of the Admi- " ralty within three miles of the coast of England, for " the period of six calendar months from the date of " this order, and that the said recited orders shall be " renewed accordingly for such period as aforesaid." It is very difficult to say that a ship within three miles of Southampton is not nearer to other poor law unions than Southampton which should deal with her. It is a difficulty which we have experienced, and to which I beg to call the attention of the Commission. See section 20, order in council, 20th July 1866: "The captain, master, or other officer in charge " of any ship or vessel lying in any part or arm of " the sea within the jurisdiction of the Admiralty, " but not comprised within any union or parish, in " which ship or vessel any case of cholera or " choleraic diarrhœa exists, or within three days " previously has existed, shall obey every direction in " writing addressed to him by the *guardians of the* " *nearest union or parish*, signed by their chairman " or clerk, in reference to the medical or other treat- " ment of the sick and other persons on board, with " the view of preventing the spread of the disease, or " to the disposal of the body of any person dead of " the disease, or to the disinfection and disposal of " things infected with the disease, or otherwise to the " removal of any unhealthy condition of the ship or " vessel."

5912. What is your opinion as to what should be the authority extending over ships in harbour?—I think that the harbour authorities and the Government should provide the means of placing an infected passenger afloat and not having him landed in the town.

5913. Who should be the authority deciding that?—As to Southampton the medical officer of quarantine, Dr. Wiblin, but I believe that he is the only officer of that kind in England, but at Plymouth and other places there may be some quarantine authority; the collector of customs perhaps.

5914. Those are the officers, but would the town council of Southampton be able to undertake the government of the harbour as well as the town?—The harbour of Southampton is under the charge of a Commission, called the Commissioners of the port and harbour, of which the council compose 40 members and the importers and exporters of goods nine, and the mayor under the charter is the admiral of the port; but his jurisdiction in sanitary matters would be a very questionable thing. And then when the Diseases Prevention Act is in force it is in force through the poor law agency and we have it removed from us.

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5915. (*Mr. Russell Gurney.*) What is your present death-rate?—20.

5916. What was it before measures were taken of which you have given us a description?—I am not able to tell you; after the cholera it went down as low as 15.

5917. (*Mr. Whitbread.*) Would the placing of a patient from a vessel in a floating hospital have the same effect upon quarantine as landing him in the the town?—No; as long as the person was afloat the port would have a clean bill of health.

5918. (*Mr. Russell Gurney.*) Have you any further observations which you wish to make to the Commission?—I submit that special legislation is needed as to cholera, and similar diseases, on board vessels arriving at seaports, in the United Kingdom, and which do not fall under the laws relating to quarantine, in the way that yellow fever does, not only in making the law clear and simple, which is not now the case, but in providing for the expense of dealing with cholera at these seaports; if a vessel comes to any port with yellow fever, the town of that port is put to no kind of expense, but if the same vessel came with cholera a considerable expense would at once fall on the town, whilst in each case the measures taken are to prevent the introduction of real or supposed contagious diseases into the kingdom, and a single case of either cholera or yellow fever would equally prevent the shipping of that port having a clean bill of health, and at Southampton put the great packet ships under quarantine in every port abroad. It is not right either that any particular port should be burthened with the cost of keeping cholera or other similar diseases out of the kingdom, when most justly it is not at a farthing expense as to yellow fever.

(46.) Edmund Beckett Denison, Esq., Q.C., examined.

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5919. (*Mr. Powell.*) I need not ask you whether you have had considerable experience and practice at the parliamentary bar?—I have.

5920. In the course of that experience I believe you have had the conduct or the opposition, as the case might be, of water bills?—Yes, of a great many.

5921. Is it your opinion that legislation of that class will continue to be necessary?—Yes.

5922. Do you think that that necessity arises from some defect in the law which may be cured by careful legislation, or are you of opinion that that defect is inherent in the nature of the subject?—With regard to the necessity of legislation in water bills I do not like to use the word "defect" at all. I do not think that there is any defect. I think that the cases which are tried with regard to water bills must be tried before somebody. Of course whether a parliamentary committee is the best somebody is an open question, but they must be tried and heard upon evidence and arguments, I am quite convinced.

5923. Do you think that each case must be considered by itself?—Yes, I am satisfied of it.

5924. Could you state some particulars which would illustrate that opinion?—Perhaps the best way of proving that is this, that we have very different results arrived at in different cases, not from inconsistency in the views of committees, but because they find it necessary to deal with different cases in different ways. Take the case which is most commonly fought in those water bills, the question of compensation to be given to millers—committees arrive at very different results upon that, and very often rightly so.

5925. You think that compensation cannot be arrived at by clauses inserted in a general Act?—I am certain of it, and I am more convinced of it now than I was this day last week, from an investigation which we have had at Huddersfield, where Mr. Glaisher has been down, and has examined a lot of rain gauges which were kept all over that district, and has discovered that nearly all the gauges which had been accepted for years as right are totally wrong. Any general inspector would have gone down and taken the result of those rain gauges, and would have arrived at a result entirely incorrect and unjust.

5926. Do you think that there would be anything special requiring special legislation, owing to the character of the industries that are carried on in the mills?—No, I do not think that. It depends chiefly upon the quantity of water that they have hitherto had, and the benefit that they will get by having that water sent down in a regulated way, according to the common phrase, instead of in a precarious way. It does not signify, I think, what is done in the mills.

5927. You think there is no difference in the case of such a mill as a corn-mill, which may greatly impede the flow of the stream, and yet may not be a very large mill, and the case of sundry mills in the north where very large operations are conducted, and where a very large population find profitable employment?—I do not think that that is of much consequence as regards water supply, but I think with regard to dams that that is a very serious matter, as a series of small corn mills often obstruct the drainage of a whole valley; but I do not understand you to be asking about

that. Perhaps that might be dealt with by general legislation.

5928. Do you think that that is peculiarly the case with regard to the sources of the supply of water, which are sometimes called gathering grounds?—Yes, there is great fighting about that very often, and it caused a good deal of very intricate inquiry in the Huddersfield case the other day. There was a dispute about the area from which the water was gathered, not merely as a question of measurement, but a question of hydraulic engineering, whether the water came from such and such an area or not.

5929. Might I ask you whether you approve of the present system, in which one town runs a race with another town for its gathering ground, and perhaps has a severe fight about it?—I do not see how that fight is to be prevented. You cannot prevent towns coming for gathering grounds, and all that ought to be done is that committees should be liberal in granting a *locus standi*, and should take care that other towns are not hurt. I think that a very great deal of mischief is done sometimes in excluding people on *locus standi* not only upon that question, but upon others, and that has always been my opinion. It is a case that ought to be heard whenever that question is raised. In another case which we only finished a day or two ago, between Bradford and Halifax, Bradford came for a water bill and Halifax came and said that they were taking the district which they wanted. When the thing was investigated it turned out, I believe (I was not in at the end) that the claim of Halifax could not be established, but that was a very proper thing to be heard by the committee, and it would have been very wrong if the objection to the *locus standi* of Halifax had prevailed.

5930. Do you think there could be a general provision by which the legislature should enable some department to say that a given gathering ground should belong to a given district?—No, I do not think it is possible at all.

5931. In such a scheme as the Rivington scheme at Liverpool, for example, where a large town derives a supply from a considerable distance, I presume that you would consider special legislation necessary?—Quite so.

5932. You cannot get the different authorities of the districts through which the conduit passes to agree?—No, I should think not. I have been engaged in some bills dependent upon that, but I was not in the original Liverpool bill.

5934. Are you aware whether in that Act there is power for the different communities along the line of conduit to get water from it?—I am not aware of that. I rather think that there is a general provision for that, either in the Waterworks Clauses Act of 1847 or the Act of 1863.

5935. Have you any further remarks to make to the Commission with regard to water bills?—Nothing occurs to me, but I say upon this as upon all other subjects the committees ought to be liberal about *locus standi*. I mean that they ought to take care not to exclude people who may be damaged a very great deal, and great injustice is sometimes done by that. Of course it is my business sometimes to exclude them if I can, but that is my opinion.

5936. I think you were concerned in the Cray Valley bill, were you not?—Yes, I was.

5099. Did not that discussion bring out some of the defects in the present state of the law?—Yes, I think it brought this out, if you call it a defect, that there was no kind of means of bringing in eight parishes which lay in one valley, forming a sort of dish, which must all be drained together if they were drained at all; but I am not quite sure that I accept the word "defect" even there, because I think it was a question which ought to have been legislated upon specially. The committee were totally wrong in rejecting that bill: I doubt if they understood the case.

5937. You think it would not be safe to leave it to a central authority to say to those eight parishes that they should combine for such purposes as were intended in that bill?—If the central authority is to hear everybody fight out their case, I do not care whether you call it a central authority, or what it is. I have no particular affection for Parliamentary committees, but all I say is that people have a right to have their cases heard by some competent and responsible tribunal.

5938. Did not some question arise in the Cray Valley case about rating?—Yes, it did. Some people complained, if I remember rightly (Mr. Pember has told you about that), that they would be rated without getting the proper amount of benefit.

5939. I think you were also engaged in the Essex reclamation scheme for the utilization of the sewage of the metropolis?—Yes.

5940. Did that bring out anything special?—It was for dealing with the London sewage, and it was practically an unopposed bill. I do not think there was any local opposition to it worth speaking of. It was a scheme for taking the London sewage, and carrying it down through a long conduit, offering it to the farmers all along, and using what was not taken by them upon the Maplin sands. I do not think that there was any local opposition to it, because there was nothing taken from anybody.

5941. Do you think it would be in any sense practicable that as a first stage in the carrying of a bill through Parliament the scheme should be examined by some central authority, and not allowed to go forward until that authority was satisfied?—I am old enough to remember when that was tried by having "preliminary inquiries" which existed for a few years, but the result was that a great deal of money was wasted in the preliminary inquiries, and the committees did their business just the same as if the preliminary inquiries had not taken place; and quite rightly, because those who made the preliminary inquiry had not the same means of arriving at the truth as the committee themselves had, and consequently the inquirers constantly made mistakes.

5942. It would not in your judgment be safe to give a veto to any authority?—No.

5943. (*Chairman.*) Then the outline of your opinion seems to be that which has been given in evidence before us, namely, throwing the responsibility upon the local authorities to find water for every place, and leaving them to get power as they can?—Without having read the evidence it is very difficult for me to say.

5944. I understand you to say that if we throw it upon the local authority to furnish sufficient water for every place, the persons interested in any mills, and so forth, should have an opportunity of being heard?—Yes.

5945. That only implies that they come to Parliament for their Act, but it would not impede our giving both the power and the responsibility to the local authorities to find water for every place somehow or other, leaving them to do it as they can?—No, I would not interfere with that at all. I think whenever a bill can be carried as an unopposed bill, you might very well get rid of the expense of having a bill at all. Provisional orders are an illustration of that. Every now and then we have to oppose a provisional order bill with reference to some particular place, but there may be a dozen other places included in the provisional order, against which there is no opposition. That might be done very well, and it is now done in the case of railways; railways can be carried now upon that footing. All I say is that whenever people have an objection to make they ought to have the means of being heard.

5946. (*Mr. Powell.*) Do you think anything could be done in the way of a public law as regards gas, so as to avoid the great number of private bills that there are every year?—I am not quite certain about a public law, but I am very nearly certain about this. I believe it is not safe for any gas company or even for a corporation to undertake a gas scheme without an Act of Parliament, because they are subject to be indicted, and

a capricious jury may find them guilty of a nuisance for what is really no nuisance at all, in the breaking up of streets. I have known cases where that has been very oppressively used. There have been decisions of the Court of Chancery to a certain extent contradictory about it, but still I believe the law is now that anybody may indict a gas company or a corporation for breaking up streets, unless they have the power of breaking them up by Act of Parliament, and if so the whole concern might be stopped any day from mischief of one kind or another, sometimes for competing schemes, and sometimes for other grounds of mischief.

E. B. Denison, Esq., Q.C.

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5947. Do you not think that every community should be able to light itself with gas without coming to Parliament?—Yes, I do, subject to the same condition that there is no opposition which ought to be heard.

The witness withdrew.

(47.) William Henry Bayley, Esq., examined.

W. H. Bayley, Esq.

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5948. (*Chairman.*) Will you state what is your profession and what appointment you hold?—I am a solicitor practising at Aldershot, and I am clerk to the local board of health for the district of Aldershot, and also deputy coroner for the county.

5949. How is the local board of health of Aldershot constituted?—It is constituted under a special Act, which enacts that there shall be 12 members, nine of whom are elected by the ratepayers and three represent the Government, and are nominated by the War Department, consisting of the General Commanding, the Commanding Royal Engineer, and the principal medical officer. So that of course two would be military who would be represented by the executive officers.

5950. What is the extent of the district?—About 4,000 acres. It extends over the whole of the parish, and the parish, I believe, is about 4,000 acres.

5951. Under what Act of Parliament is that board constituted?—Under the Local Government Act of 1858.

5952. What is the population of the district?—Between 7,000 and 8,000.

5953. What is the system of sewerage in Aldershot?—The system is duplicate. There is a regular system of sewerage and also a corresponding system of drainage. That is adopted in consequence of the sandy nature of the soil, it being deemed inexpedient to allow the surface water to pass through the sewers, and therefore there is a separate system of drainage and sewerage.

5954. By drainage, do you mean of rain water?—Yes. Surface water only.

5955. Will you describe first the sewerage?—The town has greatly increased since the system of sewerage which is now in force was constructed, and consequently several streets are without sewers. The sewer empties itself into a stream called the Blackwater at a distance of about a mile from the town.

5956. None of the sewage is intercepted and utilized?—No, it is all discharged into the running stream. I am referring to the town only, and not to the system of camp sewering, that as probably is known to the Commission is under the superintendence of Mr. Blackburn.

5957. What is the system of drainage of water?—As I have before explained, it is discharged into the same stream (the Blackwater), in addition to the town sewerage.

5958. Under whose control are the two?—The whole of the drainage and the sewerage is under the control of the local board of health.

5959. In what way do the streets which are unconnected with this system of sewerage dispose of their sewage?—By cesspits, which should be, and are for the most part, in accordance with the byelaws of the board, namely, that they are cemented and they should be air tight, and I believe that in the majority of instances they are airtight. Still there is great room for improvement with regard to particular cesspits.

5960. What is done with their contents; is there a system of scavenging?—There is no regular system of scavenging. The only attempt at scavenging which is carried on in Aldershot is that the surveyor is empowered as a temporary measure to employ a person to take the refuse from the streets. With regard to the removal of the night soil, that is left to the inhabitants themselves.

5961. What is the water supply?—Water is supplied to the town from a company called the Gas and Water Company. That is a private concern, and not under the control of the local board of health.

5962. Is there no contract between the board and the company?—Not any, with the exception of the water for watering the streets.

5963. As to the removal of refuse, how is that provided for?—That is done in the way I have explained. The surveyor has now, for temporary purposes, authority to employ a man to remove all refuse from the streets.

5964. Under whose control are the buildings?—All buildings are under the control of the local board of health.

5965. Are the statutory provisions carried out with regard to the approval of plans for new buildings?—They are not; they are to some extent, but not to such an extent as they should be in a rapidly increasing place like Aldershot. I am referring of course more particularly to the sanitary arrangements of houses with regard to drains, and proper provisions for water-closets and the supply of water, the supply of water being at present voluntary, and not under the control of the board.

5966. Do you mean that there are provisions in different Acts for submitting plans for the approval of the board, which are not carried out?—The general Acts and also the byelaws of the board framed under those Acts provide for certain acts to be done by a person prior to erecting buildings; but those Acts, although carried out to a certain extent, are not carried out to such an extent as they should be in a rapidly increasing place like Aldershot.

5967. Are there any means adopted for preventing overcrowding?—A sanitary officer is appointed by the board of health, and it is his duty to ascertain and report whether there is any overcrowding in any houses, and also to report as to the state of cleanliness and generally as to the state of buildings in the town for sanitary purposes.

5968. Is his district the whole parish?—Yes, his district extends over the whole parish.

5969. Can you tell us what his salary is?—10*l.* a year. I may add that the sanitary medical officer of the board is supposed to be in constant communication with the sanitary medical officer of the camp, but that in practice is not carried out, in consequence of the constant change of the medical officer in the camp, and very often the delay occurring in the appointment of his successor. That arrangement would work very well if carried out, but at present it is but imperfectly done.

5970. Is the medical officer in the camp changed with the troops that come in?—No, it is a staff appointment—a change takes place at different periods, generally about every six months.

5971. Are the lodging-houses under any supervision?—They are under the supervision of the board, and under the medical officer, whose duty it is to report to each meeting of the board; the board meets monthly, and it is his duty to report as to the state of the lodging-houses, and anything that may attract his attention with regard to them. Registers are kept of all the lodging-houses.

5972. Are there such sanitary provisions as public baths?—There are no public baths, and there are no

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public urinals in Aldershot. Some action is being taken with reference to the latter, and I have no doubt that it will soon be carried out.

5973. As to the flushing of the sewers, how is that done?—The sewers are flushed periodically, generally twice in one season, by the water company, under the direction of the board.

5974. What means are adopted for preventing the introduction of contagious diseases?—There I should refer more particularly to the answer which I gave with reference to the connexion between the two medical officers. It was an understood thing that the medical officers of the camp and of the local board should be in constant communication, the one with the other, so that in the event of the outbreak of any epidemic the necessary steps should be taken, but as I have before stated, in consequence of the frequent removal of the medical officer of the camp, no measures whatever have been taken in fact; there has been no epidemic calling for any action on the part of the medical officer.

5975. In the public works at Aldershot, such as the sewage works that you have mentioned, do the ratepayers of Aldershot pay part of the expenses and the War Department another?—The general district rate is contributed simply by the ratepayers until quite recently, when an application was made to the War Department, and a sum based on the assessment when the camp was first formed, which is wholly inadequate to its present value, was paid, but other than that no contribution has been made on the part of the Government. All the expenses of carrying out the provisions of the Act have fallen upon the inhabitants themselves, the ratepayers.

5976. Does not that come rather unfairly upon the ratepayers?—It has pressed very unfairly indeed upon the ratepayers, and the question has been for some time agitated, and until recently nothing has been done; but recently a contribution, or a payment which has been designated a contribution, has been made by the War Department, but that payment amounted to a very small sum, and was based only upon the assessment of the land when it was heath land, before any buildings were erected in Aldershot.

5977. The War Department are not only interested and benefited by those works, but they also have three members of the board appointed by themselves?—Yes, they have. They paid upon the assessment of 1,205*l.* for the whole of the Government property at Aldershot, making, at a 1*s.* rate, a contribution of 60*l.* 5*s.* 0*d.*, that is the only contribution that has ever been made towards the general expenses of carrying out the Act.

5978. Can you tell us the rateable value of Aldershot?—19,000*l.* I am speaking simply of the parish of Aldershot, and not of the camp.

5979. I suppose that the camp has raised the value of the property there?—Yes, it has enormously increased.

5980. Can you state what the rate has ever amounted to in the 1*l.* in one year for local purposes?—The average rate for the local board of health has been 1*s.* per annum, and the poor rate has been an average of 3*s.* 6*d.*

5981. Have they had to borrow money for any of their works?—Yes, two sums have been borrowed, one for permanent purposes by the board when it was first formed, a sum of 500*l.*, and recently for permanent private improvements, they have borrowed a sum of 1,000*l.*

5982. Do the War Department take part in that loan?—Not any; that is charged upon the general district rate.

5983. Would there be any difficulty in the War Department taking its share in the ordinary expenses?—There would be no difficulty, because the only difficulty that could possibly arise would be assessing the Government property as it now stands.

5984. Is it not assessed to the poor rates?—No; it has recently paid a contribution of an equal amount, or a corresponding amount, according to the poor-rate that has been made, towards the value of the recent poor rate on the old assessment of 1,205*l.* That, as the Commission well know, is wholly inadequate to the value of the property, it being assessed on the assessment made some 12 years ago.

5985. Is there any other point upon which your Aldershot experience could give us any special information?—I think not.

5986. (*Lieut.-Col. Ewart.*) By what works carried out by the local board with borrowed money do the War Department directly benefit?—The works executed by the board with borrowed money have been permanent works, such as paving, channelling, and sewering the town, so that indirectly I presume everyone who is living in the parish benefits.

5987. By what works do they directly benefit?—I know of no direct benefit other than the same benefit that any other inhabitant would derive.

5988. Do they benefit by any works not carried out by borrowed money?—The whole of the works that have been carried out in Aldershot have been of the description which I have mentioned, namely paving, channelling, sewering, lighting, and works of that description.

5989. Do not the War Department pay the whole expense of their own drainage, sewerage, lighting, and paving?—Yes, everything. They have a distinct system from the town, and that is paid for by the War Department, from the government funds.

5990. The Blackwater is a tributary of the Thames, is it not?—It is, I believe.

5991. Did not the sewage from the barracks and from the camp formerly go into the Blackwater?—Yes, and I believe it does now, to a great extent.

5992. Is it not disposed of upon a farm?—To a very large extent, but not wholly. The surplus goes into the Blackwater still.

5993. Does anything beyond the effluent water go into the Blackwater?—The Blackwater is so close to this farm over which the manure is thrown, that a great portion of it does now, I believe, go into the Blackwater.

5994. Do you say that from recent personal observation?—I say it from this fact, that complaints have been made to us at Aldershot; and those complaints have been all brought by persons having property in the immediate neighbourhood of the farm on the Blackwater, and their statement is to the effect that any nuisance which is created there is created by the soil which comes from the camp over this land into the Blackwater; at all events that it contributes to a very great extent to any nuisance that there may be there. Whether such is the case I do not know of my own personal knowledge; it is not a locality in which one would be very likely to walk. I merely spoke of it because, being clerk to the board, I hear statements made by members in contradiction to complaints.

5995. Are you aware under what circumstances the sewage of the barracks and of the camp was altered from discharging into the river to discharging on to the farm?—No, I am not, it was altered just as I took office under the board of health. I remember the old work being given up, and the new system under Mr. Blackburn being commenced.

5996. Then you are not aware whether or not strong local representations were made which induced the War Office to go to this expense to dispose of the sewage otherwise than into the river?—Yes, I believe great complaints were made at the time.

5997. And the whole of the sewage of the town still goes into that river?—It does.

5998. (*Sir Thomas Watson.*) Does the Blackwater fall into the Wey?—I believe it is a tributary of the Thames, it falls into the Wey and from the Wey into the Thames.

5999. (*Chairman.*) Have you had much communication with the Local Government Act Office?—Yes.

6000. By their sending an inspector to you?—No, we never had any inspector sent to us.

6001. What has been the nature of your communi-

cation with them?—More especially with reference to our borrowing powers, never with reference to any sanitary arrangements.

6002. Was your first adoption of the Act done by general consent?—Yes, by the consent of the inhabitants, not compulsorily.

6003. Have you found it generally work well?—Very well indeed.

6004. Have you no suggestion to make to us for the improvement of your local board?—No, except that perhaps it might be best to invest the medical officer with more stringent powers than he now has, so as to strengthen his hands; but if the Commission thought fit to do that I think it would be very necessary that the standard of the medical officers generally should be raised. I am speaking of them as a rule, without being personal to the gentleman who holds the office at Aldershot; but if the hands of the medical officers should be strengthened, there should be a much higher standard of qualification than is possessed by those who are generally appointed. I am referring more particularly to small districts. I am aware that in large towns scientific men are appointed who make it their business to understand all their work, and to go thoroughly into it, but in the great majority of cases, men, simply because they are medical men, are appointed, and a mere half-sheet of foolscap report every month suffices to qualify them for their salary, and when that is said I think all is said almost.

6005. Have you an inspector of nuisances?—Yes, the surveyor is the inspector of nuisances; he is not a medical man.

6006. What union does Aldershot belong to?—The Farnham union.

6007. Is that a large union?—Yes.

6008. Have the board of guardians of that union anything to do with your local government?—Not anything whatever.

6009. Could the vestry at Aldershot be a body which could undertake any local government functions?—I think not. I fancy that the board of health, as far as Aldershot is concerned, works very well indeed, and with one exception which I have mentioned, namely, strengthening the medical officer's hands, I think that the Act may be very well kept in force as it is now. The rate of mortality in Aldershot is extremely low.

6010. How often does an election take place at your board?—Once a year; three retire by rotation.

6011. Are the same persons practically re-elected often?—No, there is a constant change.

6012. What is the class of men who get elected?—About one half of those elected from the town are respectable and intelligent men and men of substance; but with regard to the others they are not of so intelligent a class. The present board is constituted of about four men who represent almost the greater part of the house property in Aldershot, and the others represent the medium class of tradesmen.

6013. You seem to think yourself that there ought to be a better system of sewerage, what stands in the way of a better system being adopted?—I think that the only thing that stands in the way at present is the expense.

6014. You think that the local board are afraid of incurring expense?—Yes.

6015. Has that been discussed amongst them, and is it generally acknowledged by them that it would be a good thing if it was not for the expense?—I am afraid that it is a subject which has been shelved on account of the expense. I have no doubt that it would be a very great expense to them.

6016. Have you had any estimate of what the expense would be?—No, the expense would be enhanced in consequence of the land about Aldershot, which would be required for the purposes of discharging the sewage on it, having become so much more valuable.

6017. In the plan of sewerage which you have in your own mind, could other parishes besides Aldershot take part?—The only parish which should in any way contribute and might possibly with convenience and advantage to itself take part, would be the parish of Ash, in that direction alone we can discharge our sewage on account of the gravitation of the soil.

6018. And under what government are they?—They are under the Farnham union; it is a very small parish.

6019. Should you be likely to get their co-operation?—I think it would involve the co-operation of the Farnham union, and that probably would be attended with uncertainty, they would probably say that Aldershot yields a very large income, and anything that is done for the benefit of Aldershot should be paid for by Aldershot.

6020. The thing being very desirable, and there not being any great hope or prospect of its being carried out, do you think there ought to be more power in the central office in London to set you in motion?—I could hardly give an opinion as to that. I think it probable that the interests of private individuals would set the board in motion, by their being at some future period, and that not a very distant period, restrained from discharging their sewage into the Blackwater.

6021. You are liable to proceedings now, are you not?—Yes, at any time I believe.

6022. Have they ever been threatened?—Yes. I am referring to any action taken by the riparian owners in the shape of an application for an injunction.

The witness withdrew.

Adjourned till Monday next at 12 o'clock.

Monday, 12th July 1869.

PRESENT:

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

The EARL of ROMNEY.
The EARL of DUCIE.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
ROBERT CHRISTISON, Esq., M.D., Pres. R.S.E.
FRANCIS THOMAS BIRCHAM, Esq.

H. W. Acland, Esq., M.D., F.R.S.

2 July 1869.

(43.*) HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S., further examined.

6023. (*Chairman.*) Do you wish to add something to your evidence upon the last occasion of our meeting?—I wish for the information of the Commission to say with reference to the communication which I made as a witness at our last meeting, that the General Medical Council has since then adopted the report to which I then referred, and it is their intention to apply to the Government for a clause in an amended Medical Act, by which they may be able to inquire into and register the qualifications and competency of medical men to practice in the Department of State Medicine, as health officers, inspectors, experts in forensic medicine, or the like, so that it is certain that in due course there will be a complete supply of qualified persons for all such offices recognized by the State.

F. Field, Esq.

2 July 1869.

(48.) FRANCIS FIELD, Esq., examined.

6024. (*Chairman.*) You are extensively employed as a surveyor and land agent for property in the neighbourhood of Oxford?—Yes.

6025. What do you consider to be the requirements of rural districts as to sewage outfall? Is it desirable to carry out general schemes for the construction of sewers in country villages?—I do not think that any large scheme is necessary for sewerage as a rule for country villages, but I am of opinion that public drains should be constructed in every village to carry off the surplus water, and that care should be taken that no sewage and nothing but clear water should be allowed to be carried into those drains, and particularly that no farmyard should be allowed to drain into them, and that it should be made compulsory that they should be constructed in every village.

6026. What should be done with the sewage, the contents of privies, and so on?—I am in favour of the old description of privy with a cesspool, and that there should be a board formed in every district whose duty it should be to inspect those places and see that they were properly emptied.

6027. What do you think should be the district placed under any rural authority?—I think that the country should be formed into districts or boards very much in the same way as a highway district is now formed, and that the members of the board should be elected by the ratepayers in the same way as in the election of waywardens.

6028. What is the usual extent of a highway district?—Highway districts are very large in some instances.

6329. Do they coincide with unions?—No.

6030. They are groups of parishes, are they not?—Yes.

6031. What do you propose should be the area of rating?—The parochial area.

6032. Which do you think should be the authority, the vestry or a board delegated from the various vestries?—A board delegated from the various vestries.

6033. Do you think that the vestry, or the committee of the vestry, should in no case be the rural authority?—No, I consider that it should be a board.

6034. What drains do you think should be provided at the public expense in purely agricultural districts?—Merely drains to carry off the surplus water, which is very much needed in many country villages.

6035. How would you have the privies cleared of their contents, and how should those contents be disposed of?—I would make it compulsory for the board to see that the privies were emptied periodically; there is room in almost every cottage garden to bury the soil and use it for the purposes of manure afterwards.

6036. Do you think that that should be undertaken by a public authority?—Yes, in order to see that it is done.

6037. That is to say, if the owners do not make use of the contents in their own gardens the public authority should compel the thing to be done and the contents to be disposed of?—Yes, just the same as now you are compelled under the Local Board Act to remove nuisances and remedy them.

6038. Do you think that a proper water supply should be provided for rural districts?—I think it is very important indeed; and where a proper supply of fresh pure water cannot be provided by wells, I think it ought to be brought from a distance, and power should be given to the board to search for and find this water, and if the springs were properly attended to there would be an ample supply of water in almost every parish.

6039. If water was brought from a distance, how would you arrange the water rates?—I would have a board constituted, and power given to that board to go through any land and to get a supply from springs, and to bring it either to drinking places or watering places into every village.

6040. By a board do you mean the same local board that you have just been mentioning?—Yes, the same local board certainly, as a sort of board of health.

6041. But very often a supply of water from a distance would implicate more boards than one in the operation, would it not?—Sometimes.

6042. Then how would you arrange for united action between those boards?—I do not think it would interfere with more boards than one very often; the district of every board would be sufficiently large, out of which a proper water supply could be provided.

6043. Amongst the rural districts around Oxford with which you are connected are there cases in which there is not a sufficient supply from the wells?—Yes.

6044. Is there any plan for introducing water into such a district from a distance?—Yes; in one case they formed a small water company that it might be done, and they tapped some very strong, never-failing springs on Mr. Holbeach's estate. They carried it a mile or so to the village, and now every house and every cottage is supplied with a watertap, and they have a large reservoir and hydrants in the village, so that they may have water in case of fire.

6045. Did one parish undertake that work?—Yes; one parish only.

6046. What is the size of the parish?—It is a parish of about 500 or 600 inhabitants I should think, and its name is Fenny Compton.

6047. Have they done it successfully?—Most successfully; it is a small limited company.

6048. Do you know at all what the rate is, or on what terms they supply the inhabitants with water?—They are very low indeed. I have had the water put into every cottage connected with the estate which I represent, which is the Christchurch estate, and the cost is something about 7*s.* or 8*s.* a year.

6049. Is that paid by the occupier or by the owner?—That is paid in every case by the owner.

6050. Is there any guard against waste?—No, there is not that safeguard that there should be against waste, but the fact is the company is got up by the farmers and the clergymen in the village, and they all live there, and they look after it. It appears to me that what is wanted very much is the power to go and bring water into those places. There is water outside those villages in many cases I know. In the case of Fenny Compton, Mr. Holbeach gave permission, but they had no power otherwise to go and get this supply of water.

6051. Do you mean that they had no power to cut through land?—No, they had no power to go through Mr. Holbeach's land, or at any rate to take his water, without his permission, and they could not have gone through other people's land.

6052. And you think that that which is done by a liberal landlord should be empowered by law?—Yes, that is what I think.

6053. What control do you think should be exercised over the construction of buildings in an agricultural district?—I think the same board which I speak of, as a sort of board of health, should first arrange what would be a proper standard, sufficient for health and decency, and that no cottage or dwelling should be allowed to be built which did not comply with the requisitions which they considered to be necessary, as is the case with respect to buildings in large towns.

6054. Do you think that a board elected by the vestries would be able satisfactorily to control large landowners in the mode of building their cottages?—They would if they had power given them by Act of Parliament.

6055. An Act is not very thoroughly carried out unless it is carried out willingly. Do you think that that might be attained?—Certainly I think it might be done.

6056. What do you consider the smallest number of sleeping rooms which a cottage for a labourer's family ought to have?—I would not have less than three sleeping rooms in any cottage.

6057. Does that mean a room respectively for the parents, for the boys, and for the girls?—Yes.

6058. What regulations do you think should be made in villages against overcrowding?—I would not allow any occupier of a tenement of less rent than 10*l.* (I say 10*l.* because I know with us a great many cottages let at 2*s.* 6*d.* a week, and some even as high as 3*s.*) to take a lodger without obtaining a licence, and that they should have to apply either to this local board or to a magistrate, who should be able to grant a licence for them to take in a lodger, and that it should be illegal for them to do so without having this licence.

6059. What would a great landowner think of the vestry giving a licence to people to take lodgers in a house belonging to him?—I think it would be the proper thing to do. I can tell you of cases where the father and the mother and the grown-up son and daughter and the son's wife have all been put into one room in order to let the second room to a lodger to get 1*s.* a week.

6060. I know from my own experience that it is very difficult to prevent it, and that careful landowners have cottage agents to see to it, but nothing but constant supervision will prevent it. What I am asking you now is whether such an inspection of cottages belonging to a great landowner could in your opinion be carried out by a public body like the vestry?—There would be some difficulty, of course.

6061. Would it not be considered by landowners generally, as an interference by a public body with their private rights?—I hope not; I think that the landowners in the end would see the rightness of it, I think that large landed proprietors are the last persons in the world to wish to have their cottages crowded.

6062. Would you enable this authority to enforce those regulations by a penalty?—Yes.

6063. Generally how do you think that sanitary laws in rural districts could be best carried out?—I think that the country should be formed into districts, and that the formation of boards of health to carry out suggestions should be made compulsory; as I have said those districts might be identical with the highway districts, and possibly one board with members elected by the ratepayers, as in the election of waywardens, could be so arranged as to perform the duties now attempted by both boards, both by the board of health and the highway board where they exist.

6064. Have you ever considered the idea of making the poor law union the area of local authority?—Yes, I have.

6065. Why do you prefer the highway district to the board of guardians?—I think that it would be better; they would be then all within the district.

6066. Is it because it is a smaller circuit that you prefer them?—That is one reason, and they would do their work better, I think.

6067. Why do you think that the board of guardians would not do the work well?—I have no reason to think that the board of guardians would not do the work well, except that they would comprise a larger area.

6068. It would be desirable to make use of existing boards as far as possible, would it not?—I should like to see new boards formed for this purpose, just as boards of health are formed in towns.

6069. Is the Highway Act adopted all over your county?—Very nearly so, not in all cases, but very generally so.

6070. It would be an objection to adopting a highway board that it is very partially adopted all over the kingdom, would it not?—That might be an objection to them certainly.

6071. Have you any other remarks that you wish to make to the Commission upon the subject of their inquiry?—I would wish to be allowed to make one suggestion with regard to the control of cottages. I was asked how many bedrooms I would allow, and I say not less than three. I would go even further than that. I would insist that the smallest bedroom should have a certain cubic area; I would interfere so far as to examine the plans so that the bedrooms should be proper for people to sleep in.

6072. What is the average rent of cottages in your district?—I should say 1*s.* 3*d.* a week, that is 3*l.* 5*s.* a year; I should think that that is the average.

6073. That does not at all cover the outlay of building them of course?—No, not at all.

6074. I suppose they are looked upon rather as part of the farm establishment?—Entirely so.

6075. What do the wages generally average in that part?—In the winter time I should think they average 10*s.* a week, not more. I am speaking of Oxfordshire now.

6076. Generally in the districts with which you are acquainted are there inspectors of nuisances?—Yes.

6077. Are they pretty efficient generally?—Yes, generally so.

6078. What sort of salaries do the boards of guardians give to the inspectors of nuisances?—I really do not know.

6079. In the districts with which you are acquainted do you think that the nuisances are practically removed by means of the inspectors reporting them?—I do not think they are removed as they should be. I think that the inspectors are very partial in the orders that they give. I know in some cases, for instance, of pigsties, a man next door to a cottage complains of a pigsty and he gets the inspector to go, and he goes and orders the pigsty to be removed, and perhaps there is a pigsty next door no less offensive, and the inspector does not take any notice of it.

6080. Are the medical officers appointed by the

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unions pretty well paid?—No, I think they are very badly paid.

6081. Do you think that the bad pay tends to the imperfect performance of their duties?—I do not think that, but I know that several are very badly paid.

6082. Are the rates for various local purposes in your district moderate?—Generally moderate. I should think that they would average about 3*s.* in the pound on the rateable value, including the poor rates, highway rates, and the county rate also.

6083. Do you mean that all the local rates put together do not on the average exceed 3*s.* in the pound?—I should think not; they are very moderate indeed.

6084. (*Lieut.-Col. Ewart.*) Do you think that the inspection of nuisances would be better carried out if the rural police were employed, or rather were instructed, to look after this matter?—I should not think so. I do not see why they should be.

6085. Have you seen them tried at all?—Never.

6086. (*Dr. Acland.*) Are there any legal difficulties in the way of correcting sanitary evils in rural districts?—No, I am not aware that generally there are any.

6087. Do you think that in every case where landowners or holders of cottage property wish to improve the cottages they have power to do so?—No; for instance where they are held on long beneficial leases, as is the case in a large parish in which you are, I believe, an official trustee of an estate, the trustees as the landowners have no power to touch the cottages, because they are principally let on beneficial leases.

6088. You refer to the property of which as you say I am the official trustee; what is the worst kind of cottage on it which, within the last 20 years, you have seen?—The worst cottages are the cottages which were really built upon the waste by squatters; they are built of wattle and plaster, and thatched, and they possess one room up and one room down; they are not fit for human habitation.

6089. Are they fit for the habitation of animals?—Scarcely that; they are not so good as good pigsties which we put up, and certainly not so good as a good stable.

6090. I believe it is within your knowledge that the trustees desired to remove those cottages, or to repair them?—Yes, but the estate being in chancery they had no power to do so.

6091. Then the estate being in chancery, or otherwise out of the power of the landowner, is legally, so to say, kept in a bad state?—Yes.

6092. That is to say, the trustees have no power to remedy it?—They have no power at present, but you are aware that the leases are running out and they will not be renewed; they will come into hand.

6093. Your experience as surveyor and land agent is divided from many counties, is it not?—Yes, into almost every county.

6094. So that you are acquainted with rural districts in many parts of England?—Yes.

6095. In your general experience do you think that the sanitary law, as it now exists, is sufficient to enable a willing landowner to remedy such evils, or is he in various ways hindered?—I should think that a willing landowner would not always have the power.

6096. Was that so in the case of the trustees?—The estate being in chancery, and let out by the Court of Chancery on long beneficial leases, the lessees are for the time being the landowners; but the trustees, who are only the landowners one may say in reversion, have no control over the property.

6097. So that they have no power to control the holders of the property?—No power to compel the holders, and the lessees will not do it, and the law is not sufficient in cases where they are unwilling to remedy those evils.

6098. With regard to the best method of removing human excreta, you are probably of opinion that the present mode of privies for detached rural cottages is the best?—I think so.

6099. Should you give the law power to secure the proper construction of those privies, as well as power to remove their contents?—Yes.

6100. I think that you would say that in many rural districts no system of police regulation could, at present, keep many of the privies in safe condition without reconstruction?—No, it could not.

6101. Therefore it is not sufficient to give power to cleanse existing places, but you must have power to rearrange them?—Yes, that is so.

6102. In the case of the company which you spoke of for supplying water in a rural district, could any one landowner have stopped the passage of the pipes through his property?—Yes, undoubtedly. You could not have gone to put them down, it would have been a trespass.

6103. So that there is no power that you know of by which a rural district, willing to supply itself by means of a company, could compel the passage of such water supply?—No, there is no power.

6104. So that the consent of every small owner is indispensable?—Yes.

6105. And there is no law applicable to rural districts enabling you to get that consent?—No; I think it is necessary that there should be a law similar to the Drainage Act of 1861, where for the purpose of draining your land you have the power, upon giving notice to the adjoining proprietor, to go through his land to get an outfall, and in this case what would be wanted would be power to go through his land to get water.

6106. Is there any such power with respect to water supply?—No, there is not.

6107. You referred to the case of the poor district of Marsh Gibbon where it was the intention to have such water supply for the village?—Yes.

6108. In that case did the landowners give their consent, do you know?—It is unnecessary in that case. The trustees owned the whole estate.

6109. But if there were one small intervening landowner, he could have stopped it?—He could if he thought proper.

6110. Although there is only one good well in the district?—Just so.

6111. You spoke just now of inspectors of nuisances in rural districts, and you implied that some of these persons are fit for the work and some are unfit, and some who may be fit do not exercise their duties; is there any way of supervising them? is there any such person as a superior county or district inspector?—No, I think that they are appointed by the board of health.

6112. Either by the vestry or the guardians as the case may be?—Yes. In this very district that you are speaking of, Marsh Gibbon, in Buckinghamshire the Duke of Buckinghamshire looks very carefully after the inspectors, and there they do their work pretty well, and if we have any nuisances (and there are a great many I am sorry to say) we very soon hear of them.

6113. Would it be an assistance to willing vestries and guardians, who chiefly appoint the paid inspectors in the separate districts, if there was a superior and skilled inspector over each county or registration district, who should guide and instruct the local inspectors?—Yes, it would be very useful to them indeed, and give them great support.

6114. And give them the kind of knowledge which can only be obtained from head quarters?—Yes.

6115. Can you reasonably expect that rural inspectors of nuisances should be conversant with all questions of cottage building, water supply, and drainage?—No, certainly not.

6116. They are merely fit to be executive?—Quite so.

6117. They might be executive to carry out a definite sanitary code?—Yes, that is all.

6118. What kind of district do you think that such a superior inspector could supervise, a county, or two counties, or what area?—No, not so much as a county; I would confine them to about the same areas as highway districts are.

6119. Do you know over what range of district the poor law inspectors are appointed?—No, I do not.

6120. (*Mr. Richards.*) What do you estimate the

cost of building cottages, such as you have described?—300*l.* a pair; one would cost more than 150*l.*, but 300*l.* a pair, that is providing them with privies, and an oven, and wash-house, and so forth.

6121. And that is irrespective, is it not, of the value of the land?—Yes, certainly irrespective of the value of the land.

6122. And what rent do you expect them to pay?—At the most 1*s.* 6*d.* per week, that is 3*l.* 18*s.* a year.

6123. Then it is perfectly evident that except a landlord builds houses for his tenants, speculators or investors would not venture upon it?—No. I daresay you know that there are speculators all over the country. Farmers build up cottages and make money by them, because they build wretched places and charge enormous rents for them.

6124. But a man would not invest money in cottages with the hope of having a decent return for the money so invested?—No, he would not. Although a cottage will usually pay to a landlord about two per cent. at the outside for his money, I consider that he gets a fair per-centage for it by the value attached to his land.

6125. Then your answer with respect to investment applied to landlords who wish to house their dependents in a proper and reasonable way?—Yes.

6126. And it would not apply to ordinary village cottages?—No.

6127. Do you think that the licence to take lodgers to which you have referred would be agreeable in rural districts generally?—Yes, I think so; I do not think that it would be objectionable.

6128. Is there a scarcity of houses in the district in Oxfordshire to which you have referred?—No, there is no scarcity of houses.

6129. Then where is the district to which you referred, where overcrowding one room for the purpose of letting another room takes place?—That was in Lincolnshire; but I meet with those cases continually in different counties and parishes; I have known some shocking cases of whole families, two families, the man and his wife, his son, and his son's wife and children all living in one room.

6130. (*Mr. Powell.*) Do you propose to give any village in a district power to pass through other districts or villages to obtain access to a good source of water?—Yes; I would give them power to go wherever they could find it.

6131. Supposing that another village might think that that other village, for some reason or another, had an equal claim or a better claim than the first, would you give that other village an opportunity of referring to some tribunal in order to prevent the first village taking away its supply?—I have not considered that question, but I would refer them to the same board that I spoke of, the district board; they should be the arbitrator in all those cases.

6132. Have you considered this question in reference to cases where the springs might be a valuable property, and might be useful for the purpose of dyeing or manufacturing paper, or many other things, would you deprive the owner of that advantage without compensation?—No; I think that if it was useful for those purposes, and had been used for those purposes, I would not deprive them of it without compensation.

6133. In short you would impose considerable restrictions upon the free action of country parishes in that matter?—I know of so very numerous cases where the water I consider is wasted, and such where waste water might be brought into another village, that I would give power to bring it. I would impose some restrictions, certainly.

6134. When you state that you would have three sleeping rooms in each cottage, do you mean to imply that you would not allow a newly married couple to live in any house with less than three sleeping rooms? I would not, because I would not have any house with less than three sleeping rooms, but I would then give those married people licence to take in a lodger.

6135. Then you would give a licence diminishing the number of persons whom that licence would enable the tenant to receive as lodgers in proportion as the family became larger?—Yes.

6136. You intend that the three sleeping rooms should not include the kitchen, where in the manufacturing districts of the north some members of the family continually sleep?—I do not include that; I mean three sleeping rooms, independent of the kitchen.

6137. Are you aware that overcrowding is a nuisance under the general statute?—Yes, but it is a nuisance that is never interfered with; I have never known such a case of interference.

6138. But if you find that there is a provision in the statute book which lies a dead letter in that volume, what encouragement have you to enact another, a still more rigid clause?—I think that if a board such as I have mentioned was formed it would not be a dead letter; I think that it would be carried out.

6139. Then you think that the evil springs from deficiency in the authority rather than from the deficiency in the statute?—Yes.

6140. And with regard to that complaint which you make against the inspector of partiality in the case of the pigsty, are you not aware that there is a provision in one of the Nuisance Removal Acts enabling a private individual to take the initiative in the case of a nuisance on private property?—I am quite aware that there is, but private individuals do not like to do that. A man does not like to interfere, to take the initiative against his neighbour, although he has a nuisance to complain of.

6141. Could not he make a complaint if the inspector did not do his duty?—Yes, he might make a complaint certainly, but I know that practically it is as I say, that there is a great deal of partiality shown.

6142. Do you see anything that Parliament can do to prevent partiality and errors of that kind, and the default of those who administer the law?—No; there will be those in every position of life that do not do their duty of course.

6143. In the case of the water scheme which you mentioned is there a constant service?—Yes, I believe there is a constant service.

6144. (*Earl of Romney.*) What part of the country were you speaking of where you said the rents were 1*s.* 6*d.* a week?—I believe I was asked what rent those cottages would command that were built in the way I proposed, and I said that it would not be more than 1*s.* 6*d.* a week, which is 3*l.* 18*s.* a year. The rents of cottages vary I know from 1*s.* a week up to 4*s.* a week.

6145. Where was it that you spoke of when you said that speculators built inferior cottages and charged enormous rents?—I was not speaking of any particular place, but of numerous places about the country. Farmers do very often build cottages, and small builders build cottages. I am not speaking of any particular site, but I know of numerous cases.

6146. Are those rents, do you suppose, sufficient to pay them for their outlay?—I imagine they are. I know that small builders will get a small piece of ground and build cottages, and I assume that they make them pay.

6147. Is that in the parts of the country where there is a want of cottage room?—Yes, principally where there is a want of cottage room; where there is a demand for them.

6148. If your plan is carried out, and a board is established controlling those persons, they would not be allowed probably to build such cottages?—No.

6149. Would the people then get the supply of cottages which it seems according to your statement they require?—I think they would.

6150. Who would build them?—Principally the landlords.

6051. But what sort of landlords?—I mean landed proprietors.

6052. But landed proprietors now do not build because they do not get paid for the outlay?—Landed proprietors are building very much everywhere. I build a great many cottages every year for landed proprietors.

6053. You spoke of the part of the country where there is a necessity for more labourers' cottages, and that speculators go there and build cottages and then charge high rents, and then you say that they would not build them, because they would not be allowed to

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build those cheap cottages; is it likely that not being allowed to build so as to get remunerated, they would still go on building?—No, they would not do so, because I think the speculation would not be a good one.

6154. Then the population continuing, who is to supply the people with cottages?—I think that the persons to supply the want are the landed proprietors.

6155. Why should they do it then any more than now?—I think they should do it now.

6156. Are they doing it as a rule all over the country?—No, not as a rule all over the country, but they have been doing it to a very much greater extent within the last 10 or 15 years than it ever has been done before, and it is increasing every year. The proprietors of properties that I know, and I know them in almost every county, are all doing something more or less with regard to their cottages.

6157. You spoke of Lincolnshire; is there not a very great want of cottage room in that county?—Yes, I believe there is in some districts.

6158. Are they providing them there?—Yes.

6159. Do men have to go very long distances from their homes to work?—Yes, frequently.

6160. Particularly in the fen districts?—Yes, particularly in those districts.

6161. (*Chairman.*) Is much of the property that you are acquainted with near Oxford collegiate property?—Yes, a great deal; nearly all that I am acquainted with.

6162. (*Earl of Romney.*) You spoke about squatters building very bad cottages on some particular property; how is it that they have been allowed to squat there?—I do not know; they squatted something like 40 or 50 years ago, or more than that. The principal part of this property is now in chancery, and the court have formed a scheme by which they gave those squatters a short term, and after that the cottages will be pulled down, and the people are to be ejected.

6163. And at the end of that time there will be an improvement?—Yes; the trustees are now building up four pairs of cottages at this moment to supply some of those people.

The witness withdrew.

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(49.) John Thornhill Harrison, Esq., C.E., examined.

6164. (*Chairman.*) You are a member of the Institution of Civil Engineers, are you not?—I am.

6165. And you were a member of the Rivers Pollution Commission, I believe?—I was.

6166. And you have filled various public offices as an occupier of land in Gloucestershire?—I have filled almost all the offices that an occupier can fill.

6167. Has the Highway Act been adopted generally in your part of the world?—Yes, to a very great extent in Gloucestershire.

6168. And do you believe that it is adopted generally throughout the kingdom?—As far as I can make out from a return to Parliament it is adopted in about one-half the parishes of the kingdom.

6169. Has that increased the local rating?—The local rating up to the present time has varied very much in different parishes. In the Wheatenhurst highway district of which I speak, there was a considerable diminution in several parishes in the three years ending December 31st, 1866, as compared with the three years previous to the adoption of the Highway Act, but in most of them there is a very considerable increase. I put in this printed paper, which will show the difference in the several parishes:

Wheatenhurst Highway Board.

Appendix to General Statement for the Year ending 31st December 1866.

Names of Parishes, &c.	*Average Expenditure for Three Years ending 25th March 1863.	Average Expenditure for Three Years, ending 31st December 1866.
	Old System.	New System.
	£ s. d.	£ s. d.
Arlingham	40 3 0	37 2 8
Eastington	67 5 7	101 3 0
Frampton-upon-Severn	69 12 5	88 0 9
Frocester	71 15 11	123 2 0
Fretherne	20 11 4	25 12 2
Hardwicke	139 11 3	110 4 0
Haresfield	226 16 7	181 10 0
× King Stanley	92 12 8	126 8 0
× Leonard Stanley	79 3 0	140 4 3
Longney	53 19 5	124 2 0
Moreton Valence	52 9 9	94 10 0
× Quedgeley	50 12 6	62 16 1
× Randwick	41 10 5	93 5 0
× Stonehouse	136 1 6	105 12 3
Saul	20 10 7	61 4 6
Standish	105 4 3	295 2 0
Wheatenhurst	47 15 4	44 13 8
	1,315 15 6	†1,814 12 4

* Mr. Vizard made this return as clerk to the justices of Whitminster from 1861 to 1863. The new board was formed in 1864.
Mr. Fryer, of Stroud, was clerk to the justices before 1861.

† Of this item the sum of 376*l.* 7*s.* 4*d.* constitutes the proportion expended in salaries, common charges, and improvements.
Brookthorpe and Harescomb, which are in the union, are not included in highway district.

The parishes marked × are not included in the Wheatenhurst Union.

6170. Where the roads are kept in better order do you think that practically it has led to a decrease?—The roads are decidedly kept in better order. A great deal of the increase has arisen from works, which were highly desirable, being carried out in different parishes by the highway board, which would never have been executed by the parish alone; such as one in the parish of Standish, where the highway passed through a brook for half a mile in length. For years there had been an endeavour to divert the road at that point and to carry it through Lord Sherborne's property, he being quite willing that it should be so diverted, but it was not done; but within two years of the formation of the highway board the road was diverted, and a good road formed to the decided advantage of the neighbourhood. In the parish of Frocester the road goes along the side of a brook for a considerable distance, and was dangerous in places, but the Highway Board constructed a bridge, widened the road at certain points, and built retaining walls. Improvements of that kind increased the rates considerably.

6171. As a farmer of 500 acres for 16 years in Gloucestershire, should you say that the local rating is increasing generally; not only the highway rates, but all local rating?—There is no doubt of it. I find that the poor rates for seven years previously to my entering upon the farm averaged about 108*l.* per annum for the parish of Frocester, amounting in 15 years to 1,620*l.*, but the amount actually paid by the parish in the 15 years, 1851 to 1866, was 2,735*l.*, the excess being 1,115*l.*, or about 69 per cent. increase upon the average of the seven years previously to my taking the farm. On the farm that I occupied this excess amounted to 223*l.*

6172. Can you tell us how much in the pound that is?—The average of seven years previous to 1851 was nearly 5½*d.* in the pound; in the following 15 years it exceeded 9*d.* in the pound. In the county rates I find that the special expenditure in 16 years in the county amounted to 100,500*l.* I divide the expenditure into special and ordinary, the ordinary expenditure being for police, prisons, lunatic asylums, and so forth. The special expenditure was for the extension of the asylum and the purchase of land, for the erection of armouries for the militia, for judges' lodging, extension of the shire hall, and the erection of police courts throughout the county, the whole amount being 100,500*l.* All that excess of 100,500*l.* came directly upon the ratepayers, because it is an amount quite in excess of the ordinary expenditure in the county; and so far it bore heavily upon the tenant farmers. It would have been more equitable apparently that the money should have been borrowed, and the expenditure spread over a number of years, than that it should have come as it did in partial sums. For instance, in the years 1854–5, the special expenditure, under head of "general payments," was 43,803*l.*,

or about 40 per cent. increase upon the ordinary expenditure, and in the years 1864 and 1865 the special expenditure was about 14,844*l.*, or about 34 per cent. in excess.

6173. Can you state the rateable value upon which those rates are made?—About 5,000*l.* was paid by the cities Gloucester, Bristol, and Tewkesbury; the remainder was levied on property rated at 1,493,731*l.*

6174. When you say that those rates fall upon the occupier, are they not virtually paid by the landlord, or considered in the rent?—The ordinary expenditure, I take it is virtually paid by the landowner, but the special expenditure must be paid by the tenant. For instance, a tenant taking a farm in 1853–4, when the "general payments" expenditure was 23,540*l.*, could not have anticipated that in 1854–5 it would be 31,208*l.*, and in 1855–6 it would be 27,434*l.*, and in 1856–7, 32,368*l.* He could not anticipate that, and he might only be a tenant for three or four years. It did not make so much difference to me as a tenant, because I had a long lease, but I am looking at it as a question affecting a tenant farmer occupying from year to year.

6175. You seem to think, at all events, that the country is getting more and more burdened by local taxes; have you any calculation as to the relation they bear in amount to the imperial taxes?—I find that the amount paid on Frocester Court Farm during the 16 years for local taxation was 1,280*l.*, and that the imperial taxation during the same period was 373*l.*

6176. How do you calculate the imperial taxation?—The assessed taxes and the income tax. It does not include the property tax upon the land.

6177. You mean direct taxation; and then you have to add to that all the indirect taxation besides?—Quite so; and of course the income tax under Schedule A. comes in as well, and the land tax, which in my case was about 50*l.* a year, paid by the landlord. I know that the increase of taxation of late years has given rise to a great deal of discontent amongst occupiers. They feel that the burden has been increasing severely; and in any sanitary measures that you might propose I think that you should take precautions against the expenditure coming heavily upon the tenant farmer, otherwise there would be very great opposition to introducing such measures.

6178. Do not you think that by simplifying both the law and the machinery of sanitary administration the same amount of work could be got for much less money?—Yes, and decidedly better executed.

6179. At present you think that there is a dread of increased taxation which would create opposition to the adoption of any new Acts?—Yes, unless precautions are taken to make taxation bear fairly upon those who are interested in it.

6180. The Highway Act, for instance, was opposed in Gloucestershire, was it not, on the ground of its probably increasing the burdens of taxation?—Yes; I read a paper in favour of the Highway Act to the agricultural association of Kingscote, and I was left in a minority of one.

6181. Do you think that in any law compelling expenditure for local improvement more care must be taken for the equitable payment of the rates?—Yes, I do.

6182. As to rural villages, how far do you think that the law should compel the construction of works for drainage, and for water supply?—I am quite sure that it would be right to compel the construction of proper privies to every cottage. It was our duty as a sanitary committee in 1854 to see that that was carried out. The people very soon found the benefit of it, so that there was generally no objection to it. Frequently there is an insufficient water-supply, and then it is a very difficult question. I think in many cases it would be a great advantage if in a rural district there were the means of obtaining a better water-supply than there is now.

6183. Do you mean by extensive works supplying several parishes?—It may be so. In the parish of Eastington, which adjoins the parish in which I lived, the people have very bad water indeed, and very little of it. Living upon the lias clay there are no springs, unless they are mineral springs. A gentleman in the neighbourhood sank a well to a very great depth, but he only obtained mineral water, which the inhabitants could not drink, and he had no means of giving them good water, excepting by taking it from the adjoining hills.

6184. What sort of distance would that be?—In that case it would be two or three miles. On the other hand, there would be this objection, that unless they made a reservoir to supply the village, the water in such seasons as we had in 1854 is insufficient to supply the farms on the line of the stream, without any abstraction of the water.

6185. What would you compel villages to do as to removing nuisances, or do you think that the law is sufficient upon that point already?—I am quite sure that it is not sufficient.

6186. What would you add to the present provision?—In every case when a nuisance was proved it certainly should be removed, and the expenses of the removal should fall upon those who caused it. In some cases it would require a system of sewerage to be carried out, and the expense of that should be put upon the houses benefited by it; in other cases the works would simply be of a character affecting the owners of single properties probably.

6187. How would you distribute the rates for those purposes between the owners and the occupiers?—I think it is very desirable, if it could be done, that the rate should go directly upon the owner.

6188. In the case of a water supply, how would you divide it amongst the owners?—I think it would be unfair to rate the whole of the parish for the supply of water to the village. I think that the property benefited should pay the expense of supplying the water.

6189. According to its rateable value?—According to the rateable value, and per head of the population perhaps to a great extent.

6190. What do you think should be the authority in those rural villages?—I think it would be very beneficial to combine a number of parishes to carry out sanitary improvements.

6191. Should that combination coincide with the unions?—I think not. The board of guardians have to do with the poor in the parish, they have medical officers to look after people's health, and they have relieving officers, but they have no officials who could superintend sewerage works, or adapted to remove nuisances. I think that the highway board is a much more desirable board to give sanitary powers to.

6192. Is it not the duty of the board of guardians to appoint inspectors of nuisances?—Quite so at present, and they do so; but I think that where works are to be carried out you would find it very beneficial to let the highway boards become the sanitary authority, because they have a staff of officers, they have surveyors in every highway district, almost all of them receiving 100*l.* a year, and many of them 200*l.*, and some of them 300*l.* a year and upwards. Those are men who could superintend the construction of works, and many could design them, and the highway board having such a staff and many men constantly employed upon the roads into the bargain, would be able to execute at once works of a sanitary nature that were absolutely necessary in case of emergency, whereas the board of guardians has no such staff.

6193. Would you take away the present sanitary functions of the boards of guardians and give them to those highway boards?—As far as execution of works goes, I would. The medical officer of the union would be most useful in pointing out where sanitary improvements were required. On his complaint to the board of guardians I think it would be very desirable that they should be empowered to call upon the sanitary board to execute certain works, or to see that they were executed, and on their neglecting to do so I think that the poor law guardians should have the power to enforce the execution of them.

6194. Would you trust to the medical officers being in fact the inspectors of nuisances, and giving the first information to the boards of guardians, and to their passing on the complaints to the highway board?—No; there are special cases where the medical officer knows that ill-health is caused by want of sanitary regulations. This was constantly the case in our union. We had sickness and high poor rates in certain spots, traceable directly to the want of sanitary regulations. The medical officer is the best person to point that out, because the question of health comes under his notice. I would have the sanitary board obliged to take action also upon the representation of a certain number of the inhabitants of the neighbourhood.

6195. Would there not be a double set of operations by your proposition, whereas if the board of guardians had not only their existing staff of medical officers and inspectors of nuisances, but also had such officers as might supervise the execution of works, the whole authority would be complete in one board?—Yes, but you would have to appoint an officer who could see to the execution of the works.

6196. That is all that is wanted to give boards of guardians complete power, is it not, according to your view?—Yes; but if boards of guardians were obliged to appoint an officer who was able to construct works it would add very greatly to the expense, whereas highway boards have generally an officer who could attend to those things.

6197. It seems to me to make it a more complicated process as you propose it; for instance, a medical officer finding a nuisance, informs the board of guardians and the board of guardians apply to the magistrates to summon the officer of the sanitary board, is not that a complication?—If upon their being requested to remove a nuisance they neglected to do so, only in that case.

6198. Is that not a complication which might be made more simple by giving the board of guardians that additional officer which you think they want?—It is pretty nearly the case at the present moment, because you have a medical officer of health in towns, whose duty it is to complain, but he does not execute the works; they would be executed by the borough surveyor. I do not see that it would work badly.

6199. In Gloucestershire, are the highway districts generally much smaller than the poor law unions?—No, they do not coincide in many cases. The highway districts coincide more frequently with the petty sessional divisions. In the case of Wheatenhurst the petty sessional division and the highway district were the same, but the poor law union included some parishes which were not included in the others, and there are some parishes included in the highway district which are not included in the union.

6200. You are decidedly of opinion, are you not, that the highway board is the best sanitary board, because they have officers and labourers for the purpose of carrying out the works?—Yes.

6201. How far would giving those additional functions to the highway board increase the expenses of them to the ratepayers?—I do not think that it would increase it much; the same officers would have extended duties, and a slight additional amount of pay would meet the increased duties.

6202. I presume the salaries of the surveyors, for instance, would have to be increased with their duties?—Yes, but not in proportion to the appointment of a person specially to carry out the sanitary requirements.

6203. I think you stated that the salaries at present varied from 100*l.* to 300*l.* a year?—Yes; there are a few under 100*l.* a year, but very few.

6204. Can you state what the inspectors of nuisances in Gloucestershire generally are paid? what is the sort of average salary?—It is very small, but I do not know the amount.

6205. They are generally men otherwise occupied, are they not?—Yes.

6206. Do you know whether they are often the relieving officers?—I am not certain.

6207. Do you think that their being underpaid men leads to their not efficiently performing their work, as they are less independent?—I think that may be so; it is very important that they should be as independent as possible.

6208. How far do you think that the local authorities in country districts should have power to borrow money for public works?—I think that where works are shown to be absolutely necessary it is very desirable that they should have power to borrow for the execution of the works; that the rate might be fairly levied through the tenants, and might come in the ordinary way out of the rent paid to the landlord.

6209. It is the fact, is it not, that some parishes at one time placed themselves under the Local Government Act for the purpose of avoiding being included in the highway district?—There have been instances of that kind.

6210. The highway district according to your plan undertaking sanitary jurisdiction for rural districts, how should small towns be provided with local authorities, such as towns from 5,000 to 10,000 inhabitants?—In towns from 5,000 to 10,000 inhabitants and upwards I think it would be well to let them have a local board as they have now, they would be sufficiently large to justify their appointing a surveyorto carry out works and to look after the town.

6211. Supposing that your proposition was adopted, you state that the Highway Act is at present only adopted in about one-half the kingdom, how would you provide for the other half?—By appointing sanitary boards coinciding with the petty sessional divisions.

6212. And in hopes that the Highway Act might gradually cover the parts which are at present unoccupied?—Yes, precisely so.

6213. Do you think that the petty sessional division would be a good one for the purpose?—I think so, because we found in working the Highway Act that we could hold our meetings on the same day that the magistrates held theirs without much difficulty, and there were generally several magistrates *ex officio* waywardens in attendance.

6214. Do you think that the clerk to the magistrates might be clerk to the board?—The clerk to the magistrates in our case was clerk to the board, and he executed both functions with advantage.

6215. Should this sanitary board have power to execute a public work such as drainage?—Yes, within its district where it was shown to be necessary for the benefit of the neighbourhood.

6216. And for the suppression and the removal of nuisances?—Yes.

6217. How far do you think that they should be under the control of the central authority, checking them in the execution of such works?—I think that there should be an inspector, whose duty it should be from time to time to see that the works were properly executed.

6218. Do you mean an inspector from the head office in London?—Yes.

6219. In such an arrangement, how would you provide for river conservancies, or what relation would the area of the river conservancy have to those boards which you propose?—Those boards, would occupy, according to the scheme that I have pointed out, the whole of the country. Many districts at present pollute rivers to the annoyance of those situated below them. I think, therefore, it would be desirable to appoint river boards, whose jurisdiction should extend up the river from its junction with the sea, or within a mile of its junction with the main river, to all points where the stream left a district upon the highest part of the basin, and entered the next sanitary district. I have prepared a map which will show what I propose (*handing the same to the Chairman*).

6220. How long were you a member of the Rivers Pollution Commission?—I was a member of the Commission from 1865 to 1868. This is a map of the

river Colne, copied from the report of the Commissioners upon the Aire and Calder. I have marked upon it what I consider should be the jurisdiction of the river Colne board, extending up each of the tributaries to the highest point where the stream left one sanitary district and entered another. The river boards would have jurisdiction about half a mile on either side of the tributaries.

6221. Why do not you go up to the point of the watershed?—For certain purposes I think they should have jurisdiction over the whole watershed, for instance, to have a *locus standi* in case of its being proposed to abstract water from one watershed to another watershed, and in case of its being considered desirable to afford a supply of water to several districts in the lower part of the basin.

6222. (*Mr. Powell.*) I presume that the map that you have handed in is a copy of the map which appears in the Rivers Pollution Commission Report on the Aire and Calder Valley, which is there described as No. 4, sketch map of the drainage area of the river Colne, its boundaries and tributaries, and is printed at the end of the appendix to that report?—It is a map of the same area, but with the limits of the jurisdiction of the river board as I now suggest marked upon it.

6223. (*Chairman.*) Do you think that conservancy boards generally might include such other highway boards as you have proposed, so as to be conterminous?—Nearly so.

6224. Do you think that the larger areas of rating should always be conterminous with the aggregate of the smaller areas of rating?—I know that there would be a difficulty in some cases, because parishes sometimes extend over a hill into an adjoining watershed, there would be cases of that kind I have no doubt, but I do not think that practically you would find any great difficulty about it.

6225. I observe in the map which you have just shown the Commission that in many instances there are reservoirs outside the districts which you have coloured?—Yes, there are a great many.

6226. In what way should you make the rated area bear the expense of those reservoirs outside?—Those reservoirs all belong either to the canal or water companies or to the mill owners within the area, and I think you should interfere with them as little as possible, and leave them in the hands of the persons to whom they now belong.

6227. Do you think that those conservancy boards could undertake both to keep the rivers within their districts from pollution, and also to use those rivers for the purpose of draining pure water from the adjoining land into them?—I think that those river boards should be of a similar character to the commissions which are now formed under the Lands Drainage Act upon the application of a certain number of the landowners. Those river boards would be formed at once both for the purpose of preventing pollution, and carrying out land drainage in the valleys of the rivers where necessary for the health of the people, or where they were requested to do such works upon the application of a certain number of the owners of property.

6228. In cases where the local authorities are themselves guilty of polluting the rivers, how would you get authority over them?—It should be the duty of the river board to see that they did not pollute the rivers, they would in fact supply the place of a public prosecutor both of individuals and of corporations.

6229. How would you apportion the expense of such works?—I think that on many rivers the only officers requisite would be inspectors to report and see that nuisances were not committed and a clerk, and I think that those expenses might be paid by a rate upon the whole of the area. When any special works were executed, such as land drainage, or works of a similar character, or the formation of reservoirs and carrying water-mains through several districts, I think that the expense should be paid by those who were benefited by the execution of the works.

6230. Do you think that there would be no difficulty in appraising the benefit?—I do not see that there would be any more difficulty in the case of drainage than there is now under the Lands Drainage Act. In the case of water-supply, each district, according to the population, would have to bear its proportion I should imagine.

6231. In combining the functions of a drainage commission and a rivers pollution commission, would there not be some difficulty in the difference of the two subjects, the one applying to all land liable to flood, and the other to all land liable to pollution?—I do not think that there would be any difficulty in the two being worked by the same board.

6232. Respecting the expenditure, do you propose that to be provided for in the same way as now under the Lands Drainage Act of 1861?—Yes.

6233. How should those river boards be constituted?—I think it would be well that they should be formed of representatives from the sanitary districts within the watershed, and of representatives of property situate on each side of the river.

6234. Do you think that the sanitary boards should send representatives, that the owners and occupiers should choose a certain number to represent them, and that the magistrates should be also *ex officio* members?—Yes, that would be well.

6235. Should the sanitary boards lay their complaints before the river boards in order to set them in operation, or should the ratepayers directly apply to the river board?—Either one or the other. I think if the sanitary board in the lower part of the river had reason to complain of pollutions caused by those above, it would be very proper for them to call upon the river board to attend to it, or a number of inhabitants situated upon the river might complain and put them in motion.

6236. Should there be a different set of inspectors appointed by the sanitary board and appointed by the river board?—Yes, certainly.

6237. You would have the nuisance inspectors appointed by the sanitary board, and the river inspectors appointed by the river board?—Yes, they must be different persons.

6238. Should you consider the Thames Conservancy Board as a model of the kind of river board that you propose?—In many cases it would not be necessary to go further than what I have pointed out; the jurisdiction of the river board extending to the main river or to the sea, but there are cases where a number of tributaries pass into the main river, and then I think it would be well to have a conservancy similar to the Thames Conservancy, extending on each side of the river for perhaps two miles or further, according to the size of the river. In the case of the Thames Conservancy their jurisdiction extends to three miles; I have here a map which explains it (*handing the same to the Chairman*).

6239. I understand you to propose, in the first place, large river conservancies which take in a considerable river country; secondly, small river conservancies which would take the tributaries, and then, thirdly, we come to the sanitary boards?—Yes. You want local interest to bear. If you were to extend the river jurisdiction over a whole county, you could hardly get local interest to bear as you could by subdividing it into minor river boards.

6240. How far from the main rivers should the jurisdiction of those larger conservancies extend?—That depends upon the size of the river. In the case of the Thames it is three miles and I think that is ample, probably too far; at any rate, it should extend as far as the river is liable to be flooded, and probably two miles on each side would be ample in most cases.

6241. What relation would those conservancies bear to the Salmon Fisheries Commission?—I think probably they might be amalgamated with the Salmon Fisheries Commission, and that they would work together very well. They would take all the larger rivers of the country, and they should have similar powers to the commissions under the Lands Drainage

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Act as regards drainage and the removal of weirs and obstructions if they are necessary.

6242. Supposing all those river conservancy boards formed all over the kingdom, and sanitary boards very nearly conterminous with the petty sessional divisions, do you think that there is any other authority necessary between those boards and the Secretary of State's department?—I think not.

6243. The proposed financial county boards have been talked of; have you considered that as a sort of medium authority between those local authorities and the Secretary of State's department?—Yes, but I do not see that it is wanted.

6244. What do you consider to be the general functions of the central authority, that is to say, the Local Government Act Office, which is part of the Home Office, over those local authorities?—Power to inspect proposed works where money was to be borrowed, and after careful examination to sanction the borrowing of that money, and probably to assist them in raising it; and subsequently I think that it would be well that there should be an inspection of the works, to see that they were properly executed.

6245. That is to say, the inspection should be for the case. You do not propose constant inspection?—No, not unless it were called for.

6246. (*Mr. Powell.*) As I understand you, you consider that the functions of the conservancy board ought to be confined to maintaining the purity and the flow of the water?—Yes, and the drainage of the adjoining land, where injurious to health, or where called for by the owners of property liable to be flooded.

6247. But in the performance of that second office should they have regard to sanitary considerations?—Undoubtedly. I am quite sure that the want of drainage in many low-lying river areas in this country liable to be flooded is the cause of very serious ill-health.

6248. You refer to the excess of water, however pure and good the quality of that water may be?—Quite so.

6249. But you would confine their functions to that excess of water, and not allow them to go into considerations of sewerage; I presume that you would leave those considerations to the sanitary board alone?—Yes, to the sanitary board; unless cases of this kind should arise, that it was desirable to carry a main sewer by the side of the river through several districts; then the river board might come in very usefully to carry out joint works for the several districts.

6250. But that would be rather carrying out the joint work as the agent or the minister of, or in communication with the sanitary board, than as acting independently?—Yes, quite so.

6251. Would you give to the proposed river conservancy board the power to construct works?—Decidedly works of agricultural drainage, not only for improving the land, but with a view to improving the health of the people residing in the neighbourhood.

6252. As far as that health was affected by flooding?—Yes.

6253. Would you give them the power, for example, to perform such works as those which may be desirable where the stream is winding, and is a considerable loss of land? Would you give the board power to make a short cut, and thereby to make the stream occupy less space, and so increase the scour?—Decidedly, the importance of having such works as you mention carried out by river boards instead of piecemeal is very great. In some instances works of that character have been carried out to the great disadvantage of persons residing on the river below. The straightening of the river has discharged the floods more effectually from the land so improved, but to the disadvantage of those lying below, which are flooded by the excess of water, and therefore the works of the river board should extend throughout the whole length of the stream.

6254. In some cases have not the works that you have been describing been done under private Acts of Parliament?—They have; there are extensive works executed on the river Aire between Bingley and Skipton, to which that observation applies.

6255. Do you think that if it was done under the conservancy board more regard would be had to all the interests of all the parties affected?—Quite so.

6256. Do you propose that those conservancy boards should act entirely independently, or that there should be some general board at which they might be represented, which should induce some harmony of action and concert between those different boards?—I do not think that there is any necessity for a larger board.

6257. How would you deal with the local boards where they now exist?—Where the local boards do not combine to any considerable extent, I think it would be better for them to be amalgamated with the sanitary board of the district, and to merge into it.

6258. Do you think it is better that they should merge into that sanitary board than that they should form themselves into groups among themselves?—There may be certain cases where it would be desirable to form a combination among themselves, in very populous districts. In fact, exactly what you sketch out has taken place lately at Hudderfield. They have added to the town of Huddersfield a very large district, including several local boards.

6259. Then in arranging such a combination for sanitary purposes under some reformed system, you would have regard to the circumstances of each case?—Quite so.

6260. In whose discretion would you leave the decision?—I think with the Home Office.

6261. Would you have the Home Office move at its own instance, or wait for representation from the localities affected?—There should be no question as to the formation of districts throughout the country. I would make that certain. After the first formation I do not see any difficulty in rearrangement where it was found to be necessary.

6262. Then you would in fact suggest that the Home Office, or some other central authority, should send round occasionally officers, portioning out the country, and probably making local inquiries in each district?—I do not think that that would be necessary; it strikes me that if the boards were all formed in a similar manner to that in which highway district boards have been formed, by the magistrates in the first instance, if there were certain parishes that desired to be changed afterwards that might be referred to the Home Office, but I do not think it would be requisite to send their officers all over the country.

6263. I understand your meaning to be this, that you would leave the initiative with the locality, and you would have the carrying out of any amalgamation left with the Home Office?—Yes.

6264. But supposing that they did not wish to unite, which I understand is the case with some local boards. Where circumstances would render the union of them desirable, but where there is perhaps an unaccountably strong feeling of local jealousy which would prevent adjoining local boards being willing to come together, how would you act in such a case?—That is a difficulty which I have not considered, but the evidence of all the witnesses that we had before us on the Aire and Calder upon that subject was to this effect, that whatever legislation you carry out must be compulsory, it must not be left to parishes to choose whether or not they will be included in the local administration.

6265. But that very term compulsion necessarily implies unwillingness, does it not?—Just so, and so unwillingness must be got over by compulsion. I am quite sure that it is requisite. In some cases where they were so unlikely to work harmoniously together some slight alteration might be desirable, and might be done without difficulty, but that is the only exceptional case.

6265. Then your evidence results in this, that you would give the Home Office the power of compelling union in certain cases where they thought the public interest demanded that union, although for a time there

might be some objection on the part of the local authorities?—Yes.

6267. In the case of there being navigable rivers in the conservancy district, would you give representation to those interested in the navigation, as was done in the case of the river Lee, where the barge owners have representatives?—Yes, undoubtedly.

6268. (*Earl of Romney.*) When you were speaking on the subject of rates and the incidence of those rates, you said that you should like to see a more equitable payment of rates, how do you think that that should be carried out?—The way in which I put it was this, in the case of works of an expensive character being carried out, I thought that the local authority, whatever it might be, should have the power of borrowing money and spreading the repayment over a number of years, and besides that, in villages where sewerage or other sanitary works were carried out for the benefit of the village, that the land should not be charged *pro ratâ* for those improvements.

6269. I thought that you were alluding rather to the evils which press sometimes upon the tenants?—Yes, upon the tenant farmers. If the whole parish were rated for sanitary improvements in the village the farmers would be paying for that which would be no benefit to them, except by improving the health of the people, and so lowering the poor rates.

6270. In the case of water, would you throw upon the owners the duty of discharging the money borrowed, unless the people paid for the water that they used?—Yes, certainly; in the shape of a rate. *J. T. Harrison, Esq., C.E.* 12 July 1869

6271. Or in the shape of a water rent?—In that case the landowners would in fact become a kind of water company, there does not appear to be any objection to that.

6272. You spoke of a place where there was great difficulty in getting water, and the landlord sunk a very deep well and then came to mineral water, how did they get over that difficulty?—They have not got over it yet; they collect water in ponds, and drink that water, which is sometimes highly objectionable.

6273. Did it never occur to them to have tanks?—I do not think they have carried it out, but Mr. Hyatt, of Painswick, consulted me about tanks for some cottages which he was about to erect on the summit of the Cotswolds, where there was no water within two miles. He constructed tanks under the cottages, collected water from the roof, and during the very hot summer of 1865 the occupiers had a constant supply of water merely from the water collected from the roofs and out-houses.

6274. Was there any filter made before the water ran into the tanks?—I do not know the particulars.

The witness withdrew.

(50.) Thomas Jones Dyke, Esq., examined. *T. J. Dyke, Esq.* 12 July 1869

6275. (*Chairman.*) Are you medical officer of health of Merthyr Tydfil?—I am.

6276. How long have you held that appointment?—Since October 1865.

6277. What is the population of Merthyr Tydfil?—The population at present is above 55,000.

6278. What is the sanitary authority?—The local board of health.

6279. Is it a corporate town?—It is not; the parish of Merthyr Tydfil forms the district of the local board of health.

6280. Speaking generally of the laws for promoting the public health and the prevention of diseases, have you found any delay or difficulty in bringing the provisions of the Acts into operation?—Yes, delay occasioned by the officials having first to give notice of the existence of a nuisance to the local authority.

6281. Take an example with reference to overcrowded houses under the 19th section of the Sanitary Act of 1866; what are the means to be taken to remove the nuisance?—Notice must be given by the official to the local authority, who may then cause notice to abate the nuisance to be served on the owner or occupier.

6282. Is notice required to be given to the local authorities in every instance where a nuisance has been discovered by the official?—In most instances, but not under the 53rd section of the Sanitary Act, 1866.

6283. That is the section for the periodical removal of manure in mews and stables and other premises, is it not?—Yes.

6284. Under the 53rd section of the Sanitary Act, where the local authority has given the public notice for the periodical removal of refuse, is a preliminary notification by the official to the authority of the non-removal of such nuisance necessary?—No.

6285. What should be the amendment of the law in accordance with the principles laid down in the 53rd section?—That of public announcement. The official, upon the discovery of the nuisance, might serve upon the premises a notice in the form adopted by the board, to remove or remedy such nuisance within a stated period, and upon failure so to do, to report the same to the board.

6286. What time would be saved by the adoption of such an arrangement?—Where the board meetings are monthly, practically six weeks; where fortnightly, three weeks.

6287. Are the provisions of the Artizans and Labourers Dwellings Act, 1867, in operation in your district?—Yes, since early in 1868. There has been much delay in bringing the provisions to bear upon the property.

6288. What is the delay?—Under the 5th section of the Act of 1867, notice has to be given by the officer of health to the local authority that a house is unfit for human habitation. There is a waste of, I believe, seven days in that. Then the local authority refers that notice to the surveyor to report at the next meeting. Here there is a waste of 14 or 28 days, according as the meetings are fortnightly or monthly. Under the 6th section he does so report, and then the local authority orders a copy of the officer of health's report, and that of the surveyor, to be served upon the owner or occupier who is to appear at the next board. This takes another 14 or 28 days. When he appears and consents, the local authority orders the work to be done in two months. So that from 13 to 17 weeks may pass before the nuisance is abated.

6289. How would you propose that the Act should be amended?—If the preliminary notice from the officer of health and the surveyor were served upon the owner or occupier, practically 5 or 10 weeks, according as the board meets twice or once a month, would be saved.

6290. By section 9 persons aggrieved by the order of the local authority may appeal against the same to the court of quarter session; would the time that the unfitness of a house for human habitation may continue unremedied be much prolonged thereby?—From three to six months.

6291. Could the appeal be more speedily dealt with by the court of petty sessions?—I believe so.

6292. If heard before a court of petty sessions, would the time granted under section 18, for the execution of the works specified in the order of the local authority, be practically shortened?—Yes.

6293. Under section 19, when the local authority themselves execute the works, they may apply to a court of quarter sessions for an order charging the costs and expenses of the works executed upon the premises; would the delay and costs incident to such application be shortened and lessened by substituting the court of petty sessions for that of quarter sessions?—Yes, if application were made under the 13th section of the 18th and 19th of Victoria, chapter 121.

T. J. Dyke, Esq.

2 July 1869.

6294. By the 26th section of the Sanitary Act, 1866, persons sick of infectious disorders, and without proper lodging, may be removed to an hospital or place for the reception of the sick upon the order of any justice; have you found any difficulty in working this section?—There were two difficulties: first, that of obtaining the certificate of the medical attendant, and secondly, that no officer had been named in the Act whose duty it should be to remove the sick. The magistrates decided that the Act had given no legal power to any officer of the Board of Health to carry out the order of the justice when obtained, so that any officer removing the sick would do so at his personal peril.

6295. By the 37th section of the same Act power is given to provide hospitals or temporary places for the reception of the sick; has your board availed itself of this power, and have any difficulties been found in carrying out the objects of the provision into effect?—In November 1868, typhus fever being epidemic, the local board, after much discussion, obtained the use of a building as an hospital, and in May they commenced to erect another hospital for the same purpose. Neither of those places have received any sick, for there seems to be no power to maintain the sick and the attendants. The wording of the section does not appear to satisfy our local lawyers that the Board of Health has such authority; the opinion is, that such an hospital being taken and furnished and medical attendants and medicine had at the cost of the Board of Health, the maintenance of the sick would be thrown upon the poor law guardians. I may mention that in section 24, where power is given to provide a carriage, the words are "provide and maintain."

6296. Would any other local authority than the Board of Health be better prepared to act when epidemic contagious diseases occur?—The poor law authorities have their staff of medical and relieving officers, and contractors for food ready, but the local board of health have no such officers.

6297. Were the provisions of the Diseases Prevention Act of 1855 put into operation during the cholera epidemic of 1866?—Yes; there was not the least difficulty in working them out, and the result was the early suppression of the epidemic.

6298. Assuming that the law in 1868 had remained as it was in 1866, with regard to the prevention of the spread of the epidemic and the treatment of the sick, would the epidemic in Merthyr Tydfil in 1868 have been as quickly controlled as the cholera was in 1866?—I believe it would. In November 1868 only about 20 houses were infected by typhus, and in but six or eight of those were many persons resident, and had those six or eight cases then been removed to the hospital, the disease might have been not only scotched but killed, for we have traced the subsequent cases to infection derived from communication with those infected houses.

6299. Referring to the Diseases Prevention Act of 1855, in case of the occurrence of an epidemic, by what means are the facts officially brought to the notice of the authorities?—By a circular of the Registrar General of births, deaths, and marriages, dated the 21st of December 1858, the registrars of births and deaths are directed to communicate with the Registrar General upon the occurrence of any epidemic disease in their sub-districts. The Registrar General communicates with the Privy Council, and the Privy Council may direct the provisions of the Act to be carried out by the board of guardians of the union, or by some other local authority. And thus a board of guardians becomes officially informed of the existence of a disease in an epidemic form in their union, by a communication sent from the sub-registrar of the district to the Registrar General, who informs the Privy Council, who informs the board of guardians, the board of guardians being the local authority which nominates and pays the district registrar.

6300. What more efficient mode of communication would you suggest, first, with the local authority, and secondly, with the central authority?—The district medical officers send in weekly to the board of guardians their medical relief books, in which the names of all paupers receiving medical relief are entered, and the diseases they suffer from, stated. As a rule, epidemic contagious diseases affect the poor first; if it were assigned to the clerk of the guardians as a duty to examine those registers of sickness weekly, the earliest information of the advent of an epidemic contagious disease would be brought to the knowledge of the board of guardians, and this board being informed might apply directly to the Privy Council.

6301. Who, in your opinion, are the central authorities who now control the laws relating to public health?—The Privy Council, the Poor Law Board, the General Registry Office, and the Factory Office.

6302. What advantage would result from concentrating them in one central authority?—That unity and promptness of action, which would lead to the early stamping out of epidemic contagious disease.

6303. Have you had any experience of the need of such concentration?—Yes, we have had a recent instance of a dead lock between the authorities in Merthyr. In November 1868 typhus became epidemic. As officer of health I applied to the board of guardians and asked them to do as they had done in the cholera epidemic of 1866, namely, to apply to the Privy Council for the necessary order under the Diseases Prevention Act. The board did not acquiesce with my request, but referring to the 37th section of the Sanitary Act, ruled that action lay with the Board of Health. On the 18th of November I applied to the Board of Health, who immediately entered into arrangements with the guardians to have the use of a refuge or hospital, and to furnish the same, and they also agreed to appoint a medical man and to find medicines. As to the maintenance of the sick in the hospital there was and is much doubt with regard to the meaning of the 37th section of the Act, whether the Board of Health is or is not to maintain the sick. The hospital was built and furnished, and a medical officer appointed by the middle of December, and an application was made to a justice for an order to remove five families, all of whom were ill with typhus, to the hospital, and the justice decided to give orders for their removal, but pointed out that no legal power had been given to the official of the local board of health. The board therefore allowed the matter to rest. Subsequently they have built an hospital in another place; but they are still at large as to who shall feed the people when they are brought in. I should mention that at present typhus has diminished in Merthyr, but we shall assuredly have it when winter comes again.

6304. Who are the local authorities now administering the sanitary laws in your district?—The local board of health, two burial boards, the board of guardians, the superintendent and district registrars, and the inspector of factories and his subordinates.

6305. How could those be concentrated and reduced in number?—I believe that the whole of the duties now done by the boards which I have named (excepting the board of guardians) and by the chief officials concerned in registration, and in inspection of factories and workshops, could, with great advantage to the public, be carried on under the supervision of one elective board, with three chief officials, a lawyer, a medical man, and a civil engineer, each of whom should possess a certificate of special knowledge of the subject of his office, granted by a constituted board of examiners, and each of whom should devote his whole time to his public duties.

6306. What would be the area of such an authority?—Unions or registration or sub-registration districts. In places like Wales not more than 100,000 persons should reside in one district.

6307. Do you regularly receive copies of the deaths registered in your district?—Yes.

6308. Are the causes of death generally stated?—Generally; but in a number of cases the causes assigned are not so perfect as they might be.

6309. In what instances are they imperfectly given? In the death of young children from convulsions not certified, the verdicts found at inquests, the visitation of God, natural causes, debility, and such like.

6310. What was the proportion of deaths not certified to the total deaths in 1868?—1 out of 25½.

6311. What was the principal alleged cause of death in such uncertified deaths?—Convulsions in 33 out of 44.

6312. What was the total number of inquests held in the district in 1868?—91 inquests, or 1 out of 12½ of the total number of deaths.

6313. Of this number how many were on cases of accidental death, and how many on deaths from disease?—55 accidents, and 36 from disease, making 91.

6314. The number of uncertified deaths from convulsions in Upper Merthyr (the population being about 27,500) being 27, in how many cases were inquests held?—2 out of 27.

6315. And in Lower Merthyr, the population being 27,500, the number of uncertified deaths from convulsions being 6, how many inquests were held?—5 out of 6.

6316. Taking the average annual rates of births at 36 and deaths at 23 in the 1,000, what would be the average daily number of births and deaths to be registered in a sub-registrar's district of 25,000?—3 births and 2 deaths.

6317. Could the duty of registering births and deaths be with greater safety to the public performed by the medical officer of health than by the present system?—I think so.

6318. (*Sir Thomas Watson.*) You have been speaking with respect to the operation of the existing sanitary laws, and to the difficulties which they present in working; are you familiar with the enactments which already exist with respect to sanitary matters?—Yes.

6319. Do those enactments, taken altogether, recognize almost all the sanitary evils which exist, both of danger to the public health or of threatening of danger, and of preventable diseases?—Pretty well all, I think. The medical officer of health, who is disposed to do his work, can include them nearly all under the Sanitary Acts.

6320. If you took those Acts in hand, could you from them make a list enumerating all the evils which you have adverted to, and would it be a tolerably complete list?—I think so.

6321. So that what is really wanted is to devise enactments which shall be effective, rather than to ascertain what the evil is?—Yes, to get at the evil and remove it.

6322. You spoke of an epidemic of typhus fever; is not Merthyr Tydfil a very closely inhabited place?—A district of Merthyr has become over-crowded for some time. It is that portion which is known as Dowlais, Sir Ivor Guest's works. There the small cottages have been over-crowded, owing to the increased activity of the works; and in that particular neighbourhood we have had typhus. The other portions of the district have been less crowded.

6323. Do you think that typhus fever is ever engendered by dirt, poverty, and crowding, without any previous leaven of contagion?—I have not in any one instance been able to trace it to freedom from contagion; in every case I have been able to trace it back to one case coming from a distance, a little leaven passes through the meal very quickly.

6324. (*Mr. Richards.*) I understand you to intimate as your opinion that the medical officer should be the registrar in every district?—I think so.

6325. You said that the three officers, who might be the complete service for a district, should be a lawyer, a medical man, and a civil engineer; do you think that there is sufficient with 100,000 inhabitants to maintain a lawyer, doing nothing else but the public ordinary work of the board?—My impression is, that according to the present payments to the legal gentlemen in the district containing 100,000 inhabitants, that is to say, the union, there would be sufficient to pay him 1,000*l.* a year for his work.

6326. Do I understand you that a medical officer, a lawyer, and a civil engineer should do the work of the Poor Law Union, as well as the health district: that they should be in fact conterminous?—My impression is that it would be wise to do so.

6327. That the local authorities in every district, whether it be a union or whatever name it is called by, should relieve the poor and be the guardian of the public health as well?—Yes.

6328. And in lieu of the present clerk to the board of guardians and in lieu of the medical officer you would have three officers, who should do the work of the local health district and the union?—Yes; but the simple duty of the medical officer of health, should be the practical supervision of the laws relating to the public health.

6329. You are familiar with the localities around Merthyr which have sprung up into masses of great population within the last few years. Do you think that some public provision is necessary to guard the public against the aggregation of population as there is at present, without any reference to the mode in which houses are built and the way in which the ground is laid out?—I think there is a crying necessity for that all through our district now. If a new colliery is opened in an upland valley 200, 300, or 400 houses are built very rapidly, and they are inhabited long before they are dry. The foundations, as a rule, are simply upon the sod, which is merely turned over, and a flag is put on that sod. There is no drainage of any kind. There is a population springing up in a neighbouring valley to ours which has now possibly 50,000 people, certainly 40,000 people, the whole of whom are living in houses that had never been looked after by any surveyor before they were inhabited.

6330. In fact most of the evils that you have to deal with in Dowlais and in Merthyr, and in all the district, the back to back houses, and the general evils incidental to houses of that character, are now being perpetuated in the neighbouring district where no board of health is formed?—Yes, that which Dr. Sutherland described to the Committee of the House of Commons, I think in 1848, as the black spot, is spreading all over the hills, and up and down the valleys.

6331. How would you remedy that evil?—I would give power to the central authority to compel the formation of local districts.

6332. Do you mean a central authority by legislation?—A central authority formed by legislation; that is to say, the law constituting a ministry of public health.

6333. And to form the whole of England and Wales into districts?—Yes, as I suggested the district of the present unions, as far as I know my own district and the number of the population there.

6334. Then, I understand you, that on districts being formed throughout the whole area of England and Wales, you would not allow houses to be built in any part, whether rural or in towns, without the plans being submitted to some authority?—I would not.

6335. And you would not allow land to be laid out for building without the plans being submitted to some authority?—No, I would not.

6336. Would you make it incumbent upon all persons laying out land for building to make provision for a water supply?—I am only speaking of my own district, and that is so exceedingly difficult to manage; but I think that the absolute necessity for water in the small districts surrounding the pits is not so very great, because they have always large gathering grounds around them, as the whole of the lands on the hills are ungrazed, or merely grazed by sheep, and not enclosed, and the rainfall in our district is enormous, it being 50 inches on the average in the year.

6337. But taking the particular district to which

you have referred, the Rhondda district, do you not conceive that the health of that large population would be very much benefited by some system of water supply being carried out?—It would certainly be a great preventive of disease if that could be done, but the district is a long one. You would require to have your gathering grounds often six miles, and sometimes nine miles, from the spot where the water would have to be supplied.

6338. Still those are engineering questions, are they not?—Yes, but they are matters of cost afterwards to the parish. In Merthyr, for example, we have spent 82,000*l.* for water alone.

6339. And they have been spending on sewers 30,000*l.*?—Yes, in fact it will be nearer 60,000*l.*

6340. The result, I believe, of the sanitary works at Merthyr for the last 19 years, as well as the water supply, and what has been done by the authorities as a board of health has been to reduce the death rate from 30 per 1,000 to something like 20, has it not?—20¼ was the last.

6341. Have not the improved sanitary arrangements been particularly efficacious with respect to infant mortality?—They have very much so.

6342. Can you give us the figures?—In the case of children under one year old the deaths out of 10,000 living were in 1852 78, and in 1867 58. In the former year the proportionate death rate of children under five years to all deaths was 527 per 1,000, and in 1867 it was but 409.

6343. Having referred to the superior health of the inhabitants of Merthyr by the sanitary arrangements, and by its splendid water supply, I need hardly ask you whether you consider that the expenditure has not been amply repaid to the inhabitants?—I believe it is so, but certain of our people grumble excessively at the cost of their good water still.

6344. But the whole of the population of the Rhondda district, and the whole of the population of the several districts in the neighbourhood of Merthyr, being a population dependent upon their labour, any reasonable expenditure whereby the health of the population would be improved, would, I presume, in your opinion be a judicious expenditure?—Very much so.

6345. Referring to the Diseases Prevention Act, and the instances which you gave us in the years 1866 and 1868, if some provisions were made by which the Secretary of State could be moved in a less formal way than is necessary now, do you conceive that advantage would result?—Yes, very great.

6346. Instead of the publication in the Gazette, and instead of the necessary formal arrangements that now exist, perhaps a simple official form of requisition to the Secretary of State would, in your opinion, be sufficient?—My belief is that that would be amply sufficient to put the law into operation, and that which now sometimes takes weeks might be effected in as many days.

6347. Have you had much difficulty in obtaining money for sanitary works in Merthyr?—The money has been obtained, but at a high rate of interest, 5 per cent., repayable by instalments for 30 years.

6348. Again referring to those rapidly increasing districts to which you have already referred, is it your opinion that if greater facilities were offered to those districts by loans being obtained at a less rate than 5 per cent. the people would be more inclined than they now are to put sanitary provisions of the law into operation?—I believe they would. The fixed charge upon the district seems to be the principal reason why the neighbouring populations do not go on more quickly in obtaining power under the Public Health Act.

6349. Practically, I believe, the present cost of borrowing money at 5 per cent., repayable in the usual mode, amounts, does it not, to about 8 per cent. upon the money borrowed?—I have no experience upon that point.

6350. (*Mr. Powell.*) You spoke in strong, and, I doubt not, in very just language as to the improper dwellings that were springing up in the neighbourhood which you have mentioned. I presume you would not apply the same terms to the new buildings which are rising within the jurisdiction of the local board of Merthyr Tydfil?—No, under the byelaws made by the board we take care to prevent their being improperly built. The byelaws require that every foundation shall be drained, and that has been done, and that the walls of the foundation up to a certain height shall be built of lime that is waterproof, and that is generally done, and the consequence has been that the houses lately built have been very much more healthy than formerly.

6351. In your byelaws do you lay down any rules with regard to the cubic contents of rooms, their height, or the size of the windows?—There have always been rules with regard to size of windows and the height of rooms, which is never to be under 8 feet. As to the windows, I forget exactly what it is, but it is only lately that the cubic space of rooms has been clearly defined.

6352. Do you determine the cubic space as well as the height?—We take care that the height is so much, and that the width and breadth shall also be so much.

6353. Is that laid down by a byelaw?—No, by a special order of the board. It was suggested about two years ago, and no room was allowed to contain less than 600 cubic feet, that being the space for two persons.

6354. But you did not do that by a byelaw?—No, not by a byelaw. The cubic space was never clearly defined in the byelaws.

6355. Do you think that a regulation like that is of binding force, except it is embodied in a byelaw?—In this way, the board declines to assent to the plans being passed.

6356. Then besides the published byelaws which each of the community knows, there are some secret regulations which the public may find out if they can?—Not secret, inasmuch as the newspapers have given them to everybody.

6357. Still they are regulations for the surveyor which have never received the sanction of the Home Office?—I apprehend that they are secret in that sense.

6358. And they are treated as byelaws, but they have not received the sanction which the Legislature says that byelaws must receive?—They would take this form perhaps, that the surveyor is directed to calulate the cubic contents of each room, and to mention to the board whether he assents to the plan or not; the particulars he is not called upon to give.

6359. Are the parties present?—Never.

6360. Then a man may have his plans rejected because the surveyor says something to the board which he does not know of, and of which he has no formal notice?—Certainly.

6361. Do you think that the Legislature should enact more ample provisions in general statutes, or that the present system of byelaws is sufficient?—I have no experience of that.

6362. Do you think that such a thing as the width of roads should be laid down by statute, or should it be regulated by a byelaw?—It is by byelaw now.

6363. Do you think that that is a proper state of things?—I should have preferred the whole of it to be by statute.

6364. Would you have the same regulations all over the country, in country districts and in town districts?—I would certainly have the minimum width of the road prescribed at all times.

6365. And the same with regard to the cubic contents of the rooms?—Yes.

6366. But have you not observed the tendency of the public mind to confuse what the Legislature will permit as a minimum with what the Legislature desires?—That I could scarcely speak to.

6367. Has your attention been directed, with reference to Mr. Torrens's Act of last year, to the wide scope of that Act, inasmuch as the earlier statutes rather referred to nuisances and to structural changes within a narrow compass, whereas the Arti-

zans Dwelling House Bill contemplates very extensive repairs and alterations, or even an entire demolition of the houses ?—Yes.

6368. Do not you think that before a man carried out such instructions, given to him by the local authority, he ought to have time to consider the matter very carefully ?—Yes, certainly.

6369. Therefore more time is necessary so as to act with fairness and justice to the owners than was required in the case of the earlier statutes ?—Certainly ; but what I would desire to save is the preliminary waste of time in mere matters of clerical detail.

6370. Do not you think that when the preliminaries lead to such a very important exercise of compulsory powers, the owner ought to have time ; he may, for example, be from home, or he may be ill, or there may be some default from similar causes on the part of his agent ?—Yes ; but still it seems to me that if the sanitary authority gives a form of notice to be filled in by their medical officer and surveyor, there could be ample time named for the man to consider whether he would or would not do it, and that would come out at the first appearance before the board.

6371. Without condescending to minute details, you think that the consideration which I suggested is an important one, and that there ought to be more time for proceeding under Mr. Torrens's Act than there is under the old Act ?—Yes, certainly.

6372. Are you aware that there are certain limited powers under the old Act to prevent over-crowding in dwellings ? Do not you think that it would be wise, in consequence of the very great powers that are in that Act, rather to extend the operation of the powers of that clause than to proceed under Mr. Torrens's Act ?—I should be disposed very much to work more fully under Mr. Torrens's Act than under any Act that I have seen yet.

6373. Do not you think that if you place property under such severe restrictions you will prevent persons spending their money in building houses ?—Property that is once properly formed does not require those restrictions. It is only the diseased that require medicine. Those that are perfectly well, do not.

6374. Do not you think that there may be a feeling of apprehension in the minds of persons that property of that class is now at best undesirable, and that if you make it still more undesirable you will prevent the building of houses ?—I cannot admit that property of that kind is undesirable, because in my district cottage property will often pay from 8 to 10 per cent. on the outlay.

6375. Then, on the balance of advantage and disadvantage, you think that, in order to remove the great mischief arising from what are often called fever nests, you are prepared to run some risks occasionally ?—Yes, a great many.

6376. You suggested that inspectors of factories and workshops should be employed and appointed by the local authority. Do you think that the local authority would be strong enough to carry out such laws as against the owners of large works and persons of very large influence in the district ?—Quite so. I do not find any difficulty, as certifying surgeon of factories, in moving the greatest of our iron princes. In fact there is no difficulty with the great proprietors; it is with the small ones that the difficulties lie.

6377. You think that we might really hope that inspectors of factories employed by the local authorities would discharge their duty independently, and be efficient servants of the public ?—Yes ; I mean of course that portion of the inspection which the certifying surgeon does.

6378. Your answer does not refer to the other duties of the inspector, which are to see that there are no breaches of the Factories Act in various ways ?—I would still have a chief inspector overlooking the whole of the works.

6379. Under the Home Office ?—My impression is that the factory department should go under the central health authority.

6380. Are you aware that some magistrates have taken a more sanguine view of the Act than others, with regard to compelling persons to enter hospitals when they are provided, and have issued orders ?—No, I am not aware of that. We have obtained orders from our stipendiary magistrate in some cases, but we have failed to execute them, inasmuch as the magistrate said that the law had named no person to do the work. Under the poor law, if a person is removed to Ireland there is special power given to some person, I believe the relieving officer, to do the work. The magistrate instanced that law, but said that in this law no such provision had been given.

6381. Do you think that it would be an unreasonable thing to expect that, where hospitals are provided under the Sanitary Act, the benevolence of private individuals would be sufficient to maintain the patients therein ?—Certainly, in our district.

6382. I understand you to regret, in common with many others, the 21st section of the Sanitary Act of 1866, which makes it necessary to give a notice ?—Yes.

6383. Supposing that section had become law as it was first introduced into Parliament, and was merely permissive, and was meant to enable the authorities to give a friendly notice if they chose, do you think that a clause of that kind would be useful ?—Certainly not; I would keep to the "shall" as much as possible.

6384. Before summoning, now you must give notice, must you not ?—Yes.

6385. Before this clause was enacted, you need not give notice, it was intended merely to give a friendly notice instead of summoning ?—My feeling is that the board should always give the notice, but that the officers of the board should be endued with power to give warning, as it were, to the parties. Now the officer must give first a notice to the board, and then the board give notice to the individual. That is the step that I want to get rid of.

6386. Cannot notice be given except at a meeting of the board ?—No, that is the misfortune ; the board must consider the notice of the officer before it will issue its own notice; for example, in a house where we have had fever, there are a lot of clothes infected that we do not wish to be removed. The medical officer of health must give notice to the board that those clothes are there, and then the board must give notice to the people not to remove them, but the clothes are gone long before that notice comes, and have spread about the evil.

6387. Do you think that you ought to have the power to order their removal ?—Yes ; to prevent their being removed till they are disinfected, and also to give notice that in particular instances the houses are not to be relet ; the medical officer is now empowered to issue a notice to the owner not to relet that house until it shall have been disinfected.

6388. Supposing that the person did not do what the medical officer told him to do, what would be the result ?—Then he is liable to a fine of 20*l*. I should like if the fine was made greater for removing the clothes which had been used about fever patients.

6389. Your proposal would be this, that in those cases of extreme emergency, where disease is likely to spread, you would give the medical officer power to give certain directions, and the violation of those directions you would make penal ?—I would.

6390. But you would not give him similar power except in such cases as you have mentioned ?—Except in such extreme cases as I have just mentioned.

6391. (*Dr. Acland.*) What are the functions which you think should be assigned to the principal sanitary inspector of a district ?—The whole duties of the sanitary officer under the local board of health, of the sanitary inspector under the burial boards, of the registrar of births and deaths, and the local inspector and certifying surgeon of factories and workshops.

6392. I notice that at present every district of the country has a poor law medical officer and legal adviser; a registrar of births and deaths under a superintendent registrar ; that it may have a govern-

ment inspector from the Local Government Act Office at any moment, as well as a medical inspector from the Privy Council; that all the public and private hospitals for the insane are under inspection by highly skilled central commissioners, besides the local authorities, and that there are inspectors under the Poor Law Board for large areas; besides all these, certifying surgeons under the Factories Act, inspectors of workshops, ordinary inspectors of nuisances, and wherever local boards think fit, health officers. Now I imagine that there are districts in which every one of those gentlemen may in some one year have to give a report in his own department within the same locality?—With the simple exception of the lunacy commissioner, I think that those gentlemen might be found employed at Merthyr every year.

6393. Do you think that it is necessary to have all these as district officers of separate departments?—No, I would have one central ministry of public health with three departments, the legal, the medical, and the engineering.

6394. With a sufficient number of skilled inspectors in each department to traverse the whole country?—Yes, I would have the same subdivision of offices working in each poor law union.

6395. Are you yourself a union medical officer?—I was so for four years.

6396. What was your relation to the central inspectors who are sent down by the Poor Law Board?—None at all.

6397. But when one of the inspectors of the Poor Law Board visits your district what does he do, does he only visit the workhouse?—He visits the workhouse, and attends at the board, and if there is any complaint made he investigates it.

6398. Has he no kind of relation to the medical officer?—None that I am aware of.

6399. But not to advise or assist him?—None at all.

6400. And you cannot appeal to him?—Not in the least; we can only appeal direct to the Poor Law Board.

6401. The poor law inspectors are in no way a sanitary authority?—Only as to the state of the workhouse infirmary can they be supposed to be so.

6402. If the poor law staff were increased, do you think that they could have sanitary functions assigned to them, because at present they advantageously take charge only of the paupers, and can usually help nobody else?—As a rule they take care of the in-door paupers, but I apprehend that they do not see much of the out-door paupers, which are the greater proportion, nor the state of the houses in which they live.

6403. Am I to understand you that it would be feasible to have absolute byelaws with regard to cottage construction?—I think so.

6404. Over all the rural districts?—Supposing in a union like that of Merthyr Tydfil, if the same byelaws were applicable to the whole, there would be no difficulty in the construction of them.

6405. Do you happen by any chance to have seen this form of register of cottages?

Date _____ 186

Cottage, No. _____ Parish of _____

Situation _____

Owner _____

Tenant. | Employer.

Married? | Children. | Boys - - | Girls - - | Ages.

Number and dimensions of rooms used as—

Bedroom.	Living Room.	Wash-house.
ft. by . high.	ft. by . high.	
ft. by . high.	ft. by .	
ft. by . high.		

What rooms have fireplaces?

Windows?	How many Square Feet of Glass?	Can they open fully?	Are they near the Floor or Ceiling?	Are there Windows on opposite Sides of Cottage?
In bedroom 1 - - -				
,, 2 - - -				Upstairs -
,, 3 - - -				Downstairs -
In downstairs rooms 1 - -				
,, ,, 2 - -				

Is there a porch and back door?
Are there, or when were there, any lodgers; and how many, male or female?
Condition of drainage and privy?
Water supply?
Pigstye?
Surrounding ground drained, or capable of drainage?
State of repair?
Probable cost of repair?
Is the cottage worth repair, or would it be better to rebuild it?
Is it wanted in the neighbourhood, or had it better be placed elsewhere; and where?

No, I have never seen that.

6406. Do you think that it would be practicable, in a district which required inspection, to fill up particulars of that kind, so that a health officer, without the trouble of personal inspection, might know what places it was proper and desirable for him to visit?—I think so. I have had a similar work done in Merthyr, and I have tabulated it; nearly every house in the town of Merthyr was inspected in this way except as to the area of the rooms.

6407. Did you make this examination yourself?—By four inspectors appointed and paid by the board.

6408. Supposing it was required by a sanitary code that in all doubtful localities there should be such a register of the condition of cottages, it would be a great assistance to all health officers, would it not?—Yes; it has been very much so to me, inasmuch as I retain the returns, and thus I have the history of every house in the parish before me.

6409. So that in fact you easily can have on your table a set of forms giving you the condition of every house in your district, bad or good, as the case may be?—Yes.

6410. Have you stated to the Commission all the facts which you wish to mention that you have met with as an experienced and active health officer?—Yes, I have mentioned everything, I think.

6411. (*Mr. Powell.*) Do you think it would answer, in such a place as Merthyr Tydfil, to make the policeman an inspector of nuisances, or to act otherwise in the execution of sanitary laws?—On the whole I think not; the people do not like policemen getting into their houses at all; it seems as if they had been suspected of the commission of a crime, whereas a man set apart wholly to the duty, under the supervision of a health officer, is almost received as an officer of the government, and he has no difficulty about it.

6412. You think that the action of the police might render those laws obnoxious to the people?—I think there would be a great deal of antagonism to it.

6413. When you stated that a register had been made of each house, did you mean that each house had been absolutely entered by some authority and measured?—No, I excluded the measurement.

6414. What are the details?—The number of houses in the street, the number of the family in the house, the lodgers, the ventilation by back doors, &c., and the conveniences and the water supply.

6415. Do you think that a district where improper houses are being built would be willing to be associated with Merthyr Tydfil under one board, they being duly represented on that board?—I think there would be considerable opposition to it, because they would rather escape from the Board of Health rates, and even pay the penalty in another form, in death and sickness.

6416. Do you think that Merthyr Tydfil would be willing to receive them?—I apprehend so.

6417. (*Dr. Acland.*) It has been suggested to the Commission in various ways that it is desirable that the whole country should be divided into what we may call sanitary districts, and that there should be certain sub-districts, like the registration sub-districts, with a medical officer such as we now have in unions, and that over those sub-districts there should be large districts, with comparatively highly paid inspectors. In Dr. Rumsey's work on State medicine it is suggested that there should be for England and Wales from 200 to 300 such inspectors, each of them with from 700*l.* to 1,000*l.* a year apiece, and that those gentlemen should be debarred from practising the profession of medicine. Can you conceive that it should be necessary to have such a number of highly paid persons?—I think not; that is, assuming that you have skilled medical officers of health in those subdivisions.

6418. But those that are in the subdivisions you would not debar from practice?—I would debar them from practice. Eventually, if a man is an active medical officer of health, he will lose his practice.

6419. In that case, supposing that to be your view, what is the area over which you think such an officer should be placed?—I have already mentioned, the district of the union, provided that in Wales it does not exceed 100,000.

6420. Is your notion that there should be a paid Government medical officer for every district of that kind, with a sufficient salary to be maintained in comfort according to his position?—Yes.

6421. Your estimate, then, would not be far removed from Dr. Rumsey's?—I should think not. I do not know the number of unions in England.

6422. I presume that those health officers would, according to your idea, be also in charge of the poor?—No. In answer to that question I think that they should have nothing to do with practice; they should throw away their lancet and their physic; they should simply be the medical minds, and not the medical men.

6423. From your experience, do you think that in every district in England a person of that sort would find employment enough to occupy him?—I included in the work that he should do, the registration of births and deaths, and I think that in a district of 100,000 there would be sufficient for him to do.

6424. But that would require an entire reconsideration, and a revision of all those offices which you have enumerated just now, and a reassignment of the duties?—Yes, I think so.

6425. (*Mr. Richards.*) Do you think it is at all probable that the districts in your locality would take any steps whatever to further sanitary reform except under obligation?—Certainly not.

The witness withdrew.

(51.) Major George Graham examined.

6426. (*Chairman.*) You are the Registrar-General, are you not?—Yes.

6427. Do you think that the registration of births is as complete as is desirable?—No, we miss a good many births.

6428. Is the registration of deaths more complete?—The registration of deaths is very nearly complete, I think; almost entirely so, I should say. With respect to the registration of births, the chief cause of the defect, I think, is the suppression of illegitimate births in large towns, and, singularly enough, I only on Saturday received a letter which will afford a very good instance of it. It is from a registrar of births and deaths in Yorkshire: "Sir,—On the 3rd of July "Dr.—— of this place, called upon me to register "a child. I found it was one he had been engaged "with as practitioner, therefore he was not qualified "as informant. I asked where it was born? In "this town. At whose house? A secret. When? "11th June. Who are its parents? It is illegitimate. "The mother? A young lady from a distance. Her "name? No reply. Where is the child? Taken "away to Manchester. Well, I must see the mother. "I will do this as privately as I can. She can come "to my office, or I will call upon her. Yes, was the "answer, but it is desired to avoid your having the "knowledge of the house; you can say High Street. "Then I declare I must have sufficient answers to all "my questions; I have this day inquired all through "High Street, and up to the last hour I am without "any further information. Still secret. The mother, "I was told yesterday, desired if possible not to "register at all. So it appears. I respectfully re-"quest to be informed what I must further do to "secure registration." There are some thousands of cases of that sort in large towns.

6429. Do you think it possible to make the registration of births more complete?—Yes, I think it

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very desirable that it should be rendered imperative, whenever the Act is amended (the Act has been in force now 32 years), for parents to give notice of the birth; that has been introduced in Ireland and Scotland in later statutes, and I should hope that the day will come when it will be introduced into England in an amending Act.

6430. What is the date of the statute in England?—The registration of births and deaths began in 1837 in England, under 6 & 7 Will. IV. c. 86.; then there was an amending Act, 1 Vict. c. 22., a year or two afterwards, but there has been no alteration within the last 30 years; but by my suggestion several alterations have been made for Ireland and Scotland, amongst which one was that the information should be imperative as to births.

6431. Upon whom should it be imperative?—The father or mother, or the occupier in case of the absence of the father and mother.

6432. But in such a case as you have just been alluding to, how could even a compulsory law be enforced?—I maintain that it is impossible to get it quite complete; it is Utopian to think so. Where people are determined to conceal it they will. I have been told of many cases by medical men where women have gone away in two or three days after birth and left the house and the town secretly.

6433. How is it that the registration of deaths is so much more complete?—Because burial must follow death, and a certificate of the previous civil registration of death must be given to the officiating minister; and if that certificate of civil registration is not given to the minister, under a penalty of 10*l.* he is bound within two days to give notice to the registrar of the death of the party whom he has buried, and, that being so, we get almost all the deaths.

6434. Still you suppose that there are many deaths of infants which do not come to your knowledge?—There are some deaths of infants which are buried as still-born, and I have no doubt that in the hope of saving expense they do escape us.

6435. Is the cause of death recorded?—The cause of death is one of the particulars recorded according to the statute. Here is a specimen of a filled-up register which we have (*handing a large volume to the Chairman*).

6436. I see in the register which you have given me the columns run thus:—No. When died. Name and surname. Sex. Age. Rank or profession. Cause of death. Signature and description of residence of informant. When registered; and finally the signature of the registrar?—Yes; that is in strict accordance with the schedule in the Act which I mentioned.

6437. Would you recommend any alteration in that form?—I am hardly prepared to answer that question. I have not been required by Her Majesty's Government to arrange anything for the amending of the present law, and before I could do so I should like to have a report as to how the new statutes work in Ireland and Scotland, which I am not aware of.

6438. Was there a list of diseases circulated in 1845 by way of making the return of the cause of death more complete?—Yes; it was drawn up by Dr. Farr (*handing a book to the Chairman*).

6439. Has the circulation of that list led to more complete returns being made?—Very much more so, and very much more accurate. The Act of Parliament does not require any notice as to the cause of death being certified by a medical practitioner as you see in that schedule, it merely gives the cause of death. 25 years ago I introduced what I hoped would be a good arrangement, encouraging medical men to give written statements of the cause of death, that where they were given by a legally qualified medical practitioner the word certified is added, as you will see in the register before you, and, where they were not given by legally qualified practitioners, the words "not certified" are introduced.

6440. What do you think are the causes of the negligence in the filling up of that column which states the cause of death; are there cases in which there is a fear of offending the relatives of the deceased?—In large towns they are very well filled up by the medical men, and in London, where I publish returns weekly, I do not think there are more than five or six per cent. who are not certified by a legally qualified practitioner or a coroner. In the country I find that competent medical men object to do so unless they are paid in many cases. In many cases a surgeon is a registrar, and his opposite neighbour is a medical practitioner, and he envies him the appointment, and he tries to spite him and will not give him information. I have repeatedly complaints of that sort.

6441. I suppose in the country districts there is a good deal of negligence on the part even of medical men frequently as to giving the cause of death?—Many do not give it for those reasons that I have just stated, and also because in many cases they do not like to describe the exact cause of death, like insanity or complaints of that sort.

6442. Do you think that a more complete return of the causes of death would entail much expense from the employment of a superior class of men to certify?—I have not much faith in any certificate of the cause of death given by any person who has not before death seen the deceased. I cannot say that I have very great reliance upon what persons inquiring afterwards state.

6443. In order to get a return better certified, would much expense be caused?—The medical men who attend are the only people who can give the cause of death, and there are many cases where there is no medical attendant at all; and there are many cases in many parts of England and Wales, in the north of England especially, where there are nothing but quacks, whom we do not recognize, and we cannot force people to have legally qualified medical practitioners.

6444. Might that lead to funerals often being needlessly delayed?—It would in my opinion lead to that very much in England, if what I have seen proposed were adopted, namely, that no person should be buried unless a medical man reported the cause of death according to the best of his opinion, even though they had not been lately attended by a doctor. I see in the country many cases of people dying of consumption and dying of old age, where the medical men do not think it necessary to see them again, as they live 8 or 10 miles off, for weeks and weeks. They know that death must come to them very shortly, and they do not trouble them with their visits. There is no suspicion at all in those cases, and I think it would be very hard upon the relatives if the funerals were delayed till another party, a sort of *quasi* coroner, came and investigated the cause of death.

6445. Do you believe that in many cases the registrars are imposed upon?—Yes, there are fictitious entries, I am sorry to say. I have been 27 years at the General Register Office, and I have had three cases of registrars making fictitious entries for the sake of the paltry shillings—a most disgraceful thing—and one party was prosecuted and imprisoned for it; but there are also fictitious entries made by people who take a copy of the entry and go about and try to collect money from the charitable, stating that their relations are lying dead and they have no money to bury them, and they produce the certificate for the purpose. That has been done largely in Manchester of late years by one woman of the name of Sarah Jackson, who is now in prison for doing so, but she is irreclaimable; she has been 12 times convicted of different crimes, and once sent for penal servitude.

6446. Such cases are rare, I presume?—Those that have been found out have been very rare, and I hope that they are rare.

6447. How are the registers which come into your office treated; are they indexed?—Yes, they are indexed. I have brought a specimen of our death index (*handing a book to the Chairman*). That relates only to one quarter of a year. I have 18,000,000 of deaths registered in that way, and 40,000,000 alto-

gether of deaths, births, and marriages; that one is only for three months in the year for England and Wales alone, and it contains about 120,000 names.

6448. By so very careful and laborious and elaborate a process of printing alphabetically all the deaths which occur, and binding them up so magnificently in Russia and brass, do you suppose that the use of them is not only temporary but is permanent evidence?—Yes, the use of them has increased enormously. I gave, I think, nearly 15,000 copies last year, and paid 2,000*l.* into the Exchequer as the produce of the fees.

6449. Were they wanted as evidence?—Yes.

6450. Have you any recommendation to make as to your own office?—No, I have not.

6451. Are there no reforms wanted to make it more perfect?—I think it is in very fair order; I do not want any extra powers beyond what I possess.

6452. There have been alterations suggested, have there not, by certain memorialists?—I beg your pardon, I thought you spoke of my clerks in the office. I have seen a memorial which was presented to the Duke of Marlborough when this Commission was first talked of (*see Appendix, p.* xvii.), and I saw that with regard to my office there were three points which were spoken of as requiring reform; one was that the cause of death should be better recorded, the other was that I should register diseases all over the country which were not fatal, and another was that I should register still-born children. Those three things I observed. I may be very wrong, but to all of those I am opposed.

6453. You have already mentioned the first; but with regard to the second, what is your objection to the registration of diseases not ending in death?—I think it is an impossibility for me to undertake it. I do not see where any line is to be drawn if I am to register all the diseases that occur to 20,000,000 people which are not fatal. I do not know where I am to begin or where I am to end.

6454. As to the registration of still births, what is your objection?—As to still births, I think it a very indelicate investigation, and I have never yet heard of any real good practical purpose to which it may be turned. I have got a specimen of how they do it in Paris which I have brought with me, where they make inquiries as to the very earliest miscarriages one month after conception (*handing the same to the chairman*). That is a thing which I hope that my office will not be condemned to commence.

6455. You do not see any practical good to set off against it?—I have never heard of any yet.

6456. Do you believe that those statistics are to be relied upon?—I suppose so. This register seems to be made with great care. I also think that people would differ very much as to absolutely living children. I think that the registrar would be scouted, and people would be horrified at his approach when he was coming and making inquiries of young women as to what had happened to them with regard to miscarriages.

6457. You think that statistics may be carried to excess?—I do, indeed. When I have been taking the census, I have received so many letters suggesting many subjects, and people urging all sorts of inquiries.

6458. Do you think that for practical purposes we get information enough about diseases from hospital returns?—I think from hospital returns, and returns from workhouses and infirmaries and reformatories and lunatic asylums and gaols, and then as to private practice in the medical journals, we get great information.

6459. A general return of diseases would have to include all the smallest infantine ailments, would it not?—Yes. I do not see how that could be avoided, or where you are to draw the line. Then of the women that bear children, there are 800,000 a year, and 800,000 infants born, and there must be a great many things to record about those two cases alone, to say nothing of what we old men suffer; and I think there would be very delicate inquiries about adults also, as well as the aged and infirm, and parturient women, very unpleasant questions.

6460. Under what department of the State is your office?—I have two masters, the Home Office and the Treasury. The Treasury appoint all my clerks, and the Home Office give me my orders.

6461. Have you nothing to do with the Privy Council?—I assist the medical officers of the Privy Council in every way I can in letting them know of outbreaks of disease. We are in continual communication with them in that respect, and also with respect to vaccination my officers help them very much indeed.

6462. One of the great objects of the Commission is to simplify both the offices as well as the law relating to public health, and it has been suggested that Mr. Simon's department of the Privy Council and Mr. Tom Taylor's department of the Home Office might be one. Supposing that was the case, do you think that your general registration office might deal with that office alone, and so reduce your number of masters, as you call them, to one, namely, the Home Secretary?—No. I do not see that any great change is wanted in the present system. I think it works very well.

6463. Would not your correspondence be simplified by having one Secretary of State to deal with?—It is not much that I have to do with the Secretary of State. Complaints against me are preferred by coroners and people, and he investigates them, but that is not very often, and the Treasury appoint all my clerks, but I am rather independent of them both, generally speaking.

6464. Your communications with the Privy Council, as I understand you, are voluntary for information, and not official?—Yes; I help Mr. Simon in every way I can.

6465. So that you have no recommendation to make as to simplifying your connexion with the departments of State?—No, I cannot say that I have. My great object is to make my office the most useful that I possibly can, and even when not required I voluntarily give assistance to any of the other Government departments.

6466. Your office began in 1837; can you tell us what principally led to its being established?—The principle that led to its being established was stated in the report of the House of Commons upon parochial registration, in which it was particularly shown how badly the registers of births, deaths, and marriages were kept by the ecclesiastics. I have made a memorandum of the chief reasons which were given.

6467. I suppose when the ecclesiastical registers were the only ones there was a want of completeness from returns not being made by nonconformists?—That was one thing. Nonconformists entered them in bibles, and they entered them in memorandum books, but they were not evidence. The idea was, according to the Act of Parliament, that they were all to be sent to the diocesan registrars. I have also before me an abstract of the returns made by the diocesan registrars, and the following memoranda will show the Commission very clearly the deficiencies which still exist:—

Burial Registers.

The parochial registers for burials are regulated by the Act 52 Geo. 3. c. 146 (1812), commonly called Sir George Rose's Act.

This statute directs registers to be kept by officiating ministers, and to be signed within seven days after each ceremony was performed (sec. 3). The books to be kept in an iron chest, whence they may not be removed (sec. 5). Annual copies to be made, and by the officiating minister verified and signed, and by the churchwardens attested (sec. 6). Such copies to be yearly transmitted to the registrar of each diocese by post (sec. 8), and to be by him safely deposited and secured from damage or destruction by fire, and carefully arranged and indexed for reference (sec. 12). No compensation is awarded to the diocesan registrars for the labour of receiving, arranging, and indexing the copies of the registers.

In the Report of the Select Committee on Parochial Registration (1833) it is remarked:—"The securities intended to be given by the last General Register Act (52 Geo. 3), by directing the yearly and universal transcription

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"of the registers, their deposit with the diocesan records, "and the preparation of indexes to facilitate searches, have "all experienced only a most limited fulfilment; as while "one-fourth of the parishes make no return, the returns "that have been sent are never indexed, and are subject to "fire and decay, and the directions of the Act have not "been and cannot be enforced" (p. 9).

Mr. Burn, in his evidence before the Select Committee, says, with respect to the transcripts:—"In many cases they "are never sent at all, and they are sometimes misdirected, "the consequence of which is they are returned to the post "office and thrown aside, and within the last few years "some thousands have been burnt" (55, p. 17). "I "happen to have been in a registrar's office when the post-"man has come in, and he would say 1*l.* 10*s.* 6*d.*: the "registrar would shake his head, and then the postman "would put them into his pocket and go away" (59, p. 17).

From an abstract of the returns made by diocesan registrars as to the execution of the 6 to 9, 12, 13, and 19 sections of 52 Geo. 3. c. 146, the following extracts are taken:—

Diocese.	Number of Parishes defective in Returns.
York -	- Not known; about one-third deficient. Some refused on account of postage; many not verified.
London	- 2,073 (or 122 per year).
Durham	- 191 not sent.
	395 not verified and attested.
	586
Bristol -	- 443 at Bristol; one-fourth deficient; more than 100 yearly incorrect.
Lincoln	- 1,814 not sent; altogether very bad.
Peterborough	88 not sent.
	657 defective sent.
	745

—(Report, pp. 142–4).

The answer returned to the inquiry "Whether fireproof deposits?" was "*No*" in 17 instances out of 27, and in one instance "Hoped so."

To the question "Whether alphabetical lists prepared?" the answer "*No*" was returned by 23 of the diocesan registrars.—(Report, pp. 143–5).

There is good evidence to show that the destruction of the original parish registers is silently but surely going on from year to year, the causes being fire, damp, and neglect. V. 'Notes and Queries" *passim.*

GEORGE GRAHAM,
General Register Office, Registrar-General.
Somerset House, 6th July 1869.

6468. And yet a great deal of very important evidence depends upon the correctness of those registers?—Yes, a very great deal.

6469. Both as to the legitimacy of births, the validity of marriages, and the proof of death?—Yes.

6470. What are Dr. Farr's reports which are annually made to you?—Every year he writes to me upon the causes of death chiefly, and the mortality, and he is constantly employed in making the office as useful as he can. For instance, I have brought with me life tables which he has published, which is an immense book which I wish to show the Commission, upon which the Government act in the Government annuities (*handing a volume to the Chairman*).

6471. These are "Tables of lifetimes, annuities, and premiums," and headed "English life table?"—Yes, made from the millions of births which we have recorded, and upon these tables the Government annuities at the Post Office now are granted. I only show that as a specimen of one of our works.

6472. I suppose a great deal of sanitary information may be derived from those returns?—Yes, a very great amount. Annually and quarterly we give returns of the births and deaths throughout the kingdom, and weekly in London and in some of the capitals of Europe, and within the last week Paris has sent me a weekly return of deaths for the first time, following our example.

6473. (*Sir T. Watson.*) Let me ask you whether one object of the registration of deaths has not a practical relation to the public health as well as to the legal matters which the chairman has adverted to?—The cause of death was inserted 32 years ago as one particular to be recorded, and since that time we have taken advantage of that particular being recorded to make as much use of it as we can with a view to bettering the public health.

6474. If registration of the causes of death be important with reference to public health, if it were possible, would not the registration of disease have a still larger and more accurate bearing upon the health of the community?—That is a point of great difficulty.

6475. You have said that a general registration of diseases is impossible, which settles that question, but then you also say, what I was not aware of, that we have returns of that kind from public institutions, hospitals, and so on; we have no returns of that sort made to any central authority, have we?—I think the Poor Law Board have them from their medical officers, and the Lunacy Commissioners from asylums.

6476. To whom are they returned?—I do not mean statistically as to the number of diseases, but I think there is a general return as to the state of health, and it might be very desirable to have that more complete.

6477. I was not aware that any returns were made from any public institutions as to disease in general, but without necessarily being a burthen upon your department, do not you think it probable that such returns might be of use in indicating what are the causes of disease, and therefore teaching us the better how to prevent them?—Yes.

6478. One reason for the registration of still-born children I imagine to be, to repress, if possible, the great tendency which seems to exist to infanticide in this and other great towns; do you not think that that is a very legitimate object?—It might in some cases, perhaps, prevent infanticide, but I think that children that ought not to be buried as still-born are chiefly children who have lived a few hours, and then have died, and who are buried as still-born, in order to save the expenses of the funeral.

6479. (*Dr. Acland.*) I think you alluded just now to a memorial which was sent to the Duke of Marlborough in the course of last year, and which was officially signed by myself as the chairman of the committee. I notice that you referred to three points with respect to the registration of death, which that committee after much consideration thought susceptible of improvement. You have just mentioned, with regard to the causes of disease, what we were not aware of, that there is a return from public institutions made to a central office. Are you quite sure that that is the case?—The medical officers of the poor law unions, I have always understood, made returns of different diseases.

6480. They are never published, are they?—No, they are never published; and the lunacy commissioners, I am informed, draw distinctions between mania and melancholia, and maladies of a similar nature.

6481. I know that gentlemen who have paid great attention to this subject are of opinion that it would not be difficult, as Sir Thomas Watson has just suggested, for all public medical institutions, such as hospitals, workhouses, and hospitals for the insane, to send returns in some recognised forms to a central authority, and I believe that it is their opinion that those returns would be really best dealt with by the admirable department which has been so many years acting under your control. Is that opinion ill-founded, or do you think that yours would be the best department?—I never meant to say that returns from the medical officers connected with those establishments would not be an excellent thing. I merely referred to a general return of all diseases amongst the public in general, not connected with any public institutions. But with regard to returns from those medical practitioners connected with public institutions, I think it would be a very good arrangement that they should make them, and, whether they should come to me or not, I dare say we could deal with them. The General Register Office would be able to do it.

6482. I can well understand that your office might be unwilling to undertake any fresh burthens, but you also, I daresay, will understand that we outside, who have reason to admire the gigantic work of that office, and who believe that it is the best institution of the kind in the world, the most skilfully designed, and the best conducted, so far as I know, should naturally wish sickness returns to come under that administration?—We could certainly do that; in fact, there are no statistics in the world that we cannot get, if you give us the money. I have taken two censuses, and I think if we could get a census of the whole population of England all in one day, by bringing out 36,000 men as I did, and sending out waggons along the Strand conveying 50 tons weight of paper, there is nothing that we cannot collect in the way of statistics if you give us the money, excepting the diseases of the public.

6483. I would not have referred to this memorial, nor should I presume with reference to it to express the opinion of any other member of the Committee. I therefore, in referring to it further, would only speak my own personal opinion, which is, that to obtain anything like a registration of existing disease in private persons is not only hopeless, but in my judgment undesirable; but I should venture to ask you, not giving a definite answer if you do not think fit, whether there is any *primâ facie* difficulty in the registrar receiving carefully-prepared registers of diseases in public institutions, supposing it to be desirable?—No difficulty whatever in receiving it from public institutions, and I think it would be very desirable.

6484. That settles the point with regard to return of disease; the question concerning still-born children is one of peculiar difficulty; but as the difficulties with regard to the registration of the causes of death in a great measure depend upon causes which you have yourself alluded to, I would presume to ask you one or two questions concerning that point. I think you said that there are necessarily many cases of death where there have been no medical attendants?—In many cases they have no medical attendant at all, and there are many where they have quacks, and bone-setters, and herbalists.

6485. Therefore the medical men of the district under the existing arrangements are not to blame for being unable to certify to the death of persons whom they never saw during their life?—No, certainly not.

6486. If there be any fault in the matter it is the fault of parliament; you cannot demand of the medical men in a place that they should certify to that of which they know nothing?—No, certainly not.

6487. So that if every death is to be certified by a medical man, some other arrangement must be made by the Government than that which now exists; it must be the duty of some official?—Yes. I do not suppose that it is thought possible to pass an Act of Parliament, saying that everybody is to have a legally qualified medical practitioner during their life, therefore it can only be after their death.

6488. I by no means suggest that, but supposing it to be required that your certificate should be signed by a medical man, it cannot necessarily be by a medical attendant?—No.

6489. It must be by some public officer, if done at all?—Yes.

6490. There is another case to which you have alluded, which, I have no doubt, practically with honourable practitioners, is a frequent reason why certificates are not signed. You have stated that there are many such cases as phthisis, or cases of purely chronic disease in the aged, where the medical man who has once seen the patient never goes there again?—Just so, because he knows it is no use.

6491. Then if he is a careful man, on hearing of the death of such a person whom he may have seen once months before, he says, "Really, I have no doubt she "died of phthisis, but I cannot certify the fact; I know "nothing about it." That is a case, is it not, that must often occur?—We have a good many cases of that sort, and there have been cases where medical men at dispensaries, believing the people who came to tell them that other parties were dead, have certified the deaths of those parties, but they have turned out afterwards to be alive. Therefore, it is a plan now adopted by some medical practitioners to say that they believe so and so is dead. In those cases I do not enter them as certified; I am forced to reject them.

6492. The fact is, with respect to them, is it not that persons are often called upon to sign certificates of various kinds which, if careful, they cannot properly sign?—Quite so.

6493. In public institutions, for instance, the medical men often have to certify that a person is "poor," and a careful man would insert the words "who I believe is," just as you have seen in the case, "who I believe is dead?"—Yes.

6494. From these reasons statisticians may properly say that the registration of the causes of death is not complete; but the question arises whether it can be made more complete?—That is the question.

6495. And you would also say that there must be for some time to come a certain per centage of deaths which cannot be certified on any competent authority?—I think so. As I said before, I have no great faith in what has been proposed, that medical officers should examine after death, and that nobody should be buried until that medical officer has given a certificate that the party is really dead, and what he thinks he died of; that I think would be a great hardship. It has been proposed, and very strongly advocated by Dr. Farr, and I am sorry to differ from him, because he is a great authority.

6496. With respect to the cases which have been made public of the unwillingness to take the certificate of death by the Bank of England, is there any remedy?—No. The Bank of England suffered so much by Barber and Fletcher, when they lost 5,000*l.* or 6,000*l.* upon a fictitious entry, that ever since that they do not recognize my office; they only have the burial certificate, and they adhere to it.

6497. As a matter of fact, even the burial certificate need not of necessity prove that a person certified is dead?—No. We had a case at the Farnham workhouse about six months ago, where they took a coffin to be buried; the bearers congratulated themselves that the pauper was very light, and that she must have been very thin and worn out, and emaciated. They buried her; the officiating clergyman performed the funeral service, but a day or two afterwards they had to bury another party from the Farnham workhouse, and they opened a shell that was there, and they found this old woman whom they thought they had buried; they had buried an empty coffin from the workhouse, and they found the old woman lying in the shell unburied.

6498. Then, so far as you can advise the Commission, the causes of death are registered now as nearly as possible?—In Scotland, by my suggestion (and I am afraid that I have been very much abused for it), it was made compulsory under a fine for every legally qualified medical practitioner to give a statement of the cause of death, which is not the case in England. That has been very unpopular in Scotland, but I am not at all prepared to say that in my humble opinion there is any hardship in asking a medical man, considering the privileges he has in his profession, to state what in his opinion his patient died of.

6499. And you would make it compulsory?—I proposed it, and it was enacted in Scotland, and it has been very unpopular there; and with regard to Ireland afterwards, I did not propose it on account of the doctors thinking it a great hardship that they should be compelled to state what the cause of death was. As far as my judgment goes I cannot say that I see any hardship in any medical man being called upon to say what he thinks his patient died of. There is no inquiry generally made as to his practice, as there is with unprofessional people, local herbalists, and bone setters; he uses his knife and employs his poisons; there is no inquiry; he does it to the best of his

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ability, and I do not think there is any hardship in asking him what he thinks killed his patient.

6500. Do you know why they object to it as a hardship?—They consider it a hardship; they think that they ought not to be compelled by Act of Parliament to do it, and that it should be left optional to them to do so, and in many cases they cannot conscientiously state the exact cause. Sometimes parents and relatives would wish them not to state the exact disease; for instance, not to state the congenital syphilis of a little child, and not to state scrofula, and not to state insanity; that is a reason which has been given to me.

6501. I know a case where objection was made, and I daresay you know similar cases, to entering delirium tremens?—Yes, that is another objection, and you might mention a good many others; cases where death has been caused by a long-standing disease, ignored in former medical certificates given to insurance offices.

6502. Did you ever hear of a case where a young medical man was about to have an action brought against him for entering such disease?—That might well be, but I am not aware of any such case.

6503. That kind of difficulty would affect, would it not, to a slight extent, the per-centages?—Yes, it would.

6504. But, upon the whole, would not practically invalidate the returns?—They would be rare; they only occasionally occur.

6505. (*Sir Thomas Watson.*) Do you think that families would have the same objection to those returns as sick persons naturally have that their physician should tell the public what is the matter with them?—Very much so.

6506. (*Dr. Acland.*) A very serious question then arises. No doubt that it has been a question of professional communication, and it requires great circumspection on that ground.—Yes, of confidential communication.

6507. Such a return goes to one of the local officers. Would it be possible for medical men to be able to send the certificate to a central office the same as the returns of the income tax may be sent to a special commissioner?—No. We are forced to lay down a most stringent rule, that once a register is commenced it should be gone through with and never touched except under particular special regulations. It would never do to touch up a column and insert afterwards the cause of death. It is all finished before the informant signs, which I think is the great feature in registration.

6508. (*Mr. Powell.*) You publish from your office a document which is estimated, and justly, at a very high value; you issue a report in which you give certain theories as to the causes of death and the state of the public health, and a document dealing with not dissimilar subjects is issued independently from the Privy Council Office by their medical officers; do you think it is an advantage to the public that two independent minds should independently make reports for each year dealing with the same subject?—I know of nothing but deaths. The Privy Council have their inspectors all over the country, and they deal with diseases, and diseases which are not fatal, and vaccination and many diseases, and I think it is very desirable that the medical officer of health should publish a report in addition to mine. Most excellent reports issue from Mr. Simon, and I think that it is a great advantage that we should have a second report.

6509. But still to a certain extent you cover the same ground, and you think that the publication is desirable?—I do; he deals with diseases not fatal, and I deal with nothing but deaths.

6510. Do you find that any difficulty arises from the fact that the guardians appoint the registrars, and that the registrars and the superintendent registrars appointed by the guardians hold office during your pleasure?—I rather like it; it would be impossible for me, sitting at Somerset House, to appoint with any satisfaction registrars at Penzance. I cannot ascertain the characters of those best fitted, but when they ought to be removed, I can exercise a discretion and dismiss them.

6511. You define their qualifications, do you not?—I see their qualifications. I see a specimen of their handwriting and spelling, for instance, and I can disapprove of the appointment of the guardians; but I prefer that it should be in that way that they should have the patronage, and that I should reject them if I do not think them sufficiently good. I always like to have the power of dismissing them, which is the only hold I have of getting the returns made quickly.

6512. (*Dr. Acland.*) Supposing that the Privy Council should undertake to compare statistics of disease in this manner, they would require local registrars, so to say, for the purposes of disease as well as deaths, and there would be a double set of officers required?—If I understand that the registrars are only to receive reports of diseases from the officers of institutions and send them up to my office to be tabulated, I see no difficulty in that, and I do not see that there would be much expense incurred if they only pass through their hands.

6513. Then it would not be necessary or desirable that those kind of returns should go to the Privy Council at all?—Unless they wanted them speedily, upon an outbreak of epidemic or anything of that sort. Except in those cases they might come at once to my office and be tabulated, or the medical officer of health attached to the Lords of the Privy Council might do it independently of me.

6514. I think I am right in saying that your office, as well as the Poor Law Board, has a complete and universal system of local officers, whereas the Privy Council has no such system?—No, they have not. It would be necessary for me to collect them, and if it was considered desirable, I could tabulate them and publish them, or send them to Mr. Simon.

6515. (*Mr. Powell.*) Under the Act of Parliament the gentleman holding your appointment receives his appointment under the Great Seal, but, as a matter of form I presume the appointment rests with the Home Office?—It is a patent office, for which I paid a couple of hundred pounds in fees, I remember, and I think it is *quamdiu se bene gesserit*. The patronage is with the Home Office; my brother, Sir James Graham, appointed me.

6516. You stated that you give help to Mr. Simon; is that help so given a friendly help, or is it within the strict requirements of your office that you should give that help?—He writes to me always in the name of the Lord President of the Council, and of course I obey it, as if it was a command, with the greatest readiness.

6517. But you did not perform any such office when you were first appointed?—No, that has gradually arisen very much from the Compulsory Vaccination Act, and from my anxiety to assist in getting vaccination attended to in all cases.

6518. Do you receive accounts of the state of mortality in Paris?—Within the last fortnight I got the second total of the weekly mortality of Paris up to Saturday, and it will be published on Wednesday next; and I get the same from Berlin and Vienna.

6519. Do you think that what you learn from those returns will suggest any improvement in our system?—No, we only get the total per-centage of deaths in the week, and the rate of the thermometer during the week; we do not get the particulars of the causes of death, except from Paris. In a few cases in that city we do. For instance, I stated in my last return that the deaths from scarlet fever were so much more in London than they are now in Paris.

6520. It is often remarked, with regard to the registrars of marriage, that persons who are able to write do not sign their names, because the registrar would rather keep his books neat, or perhaps because the parties are nervous; do you think that that prevails to any extent which is appreciable?—It does with regard to the births and deaths in the case of the informants signing the register; the registrars wishing to keep their books neat rather let them make

their mark, but that we discourage. The same may be the case with respect to marriages; but as the same feeling exists from year to year, we draw some conclusions, from the numbers that we have who make their mark, as to education; it is a slight indication of what the state of education is.

6521. In the discouraging statement which you have made with respect to the education of the country, have you borne in mind that consideration, and made deductions accordingly?—We merely state the facts. I think we have been improving of late years. As far as the marriage registers go, those in Cumberland and Westmoreland are always the best kept, and it is rather an extraordinary thing that they should be the worst for illegitimacy; although the best educated, there are more illegitimates born in those two counties than in any others.

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6522. You have discouraged the writing of the signatures by the registrar instead of by the parties; that is an official communication, and of course it is pretty generally known that you prefer that people should write when they can?—Yes. I have two or three inspectors who go about the country all the year round, and have done so for the last 20 years, and they look to that very much; they instruct the registrars to get as many real signatures as they can, rather than a mark, as to births and deaths; but as to marriages, that is chiefly done by the Established Church, and I have nothing to do with it. Most marriages are in the Established Church, or by far the greatest proportion.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 15th July 1869.

PRESENT:

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

THE EARL OF ROMNEY.
THE RIGHT HON. LORD ROBERT MONTAGU, M.P.
LIEUT.-COLONEL EWART, C.B., R.E.
JOHN TOMLINSON HIBBERT, ESQ., M.P.
FRANCIS SHARP POWELL, ESQ.
BENJAMIN SHAW, ESQ.
FRANCIS THOMAS BIRCHAM, ESQ.

(52.) The Rev. WILLIAM T. BECKETT examined.

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6523. (*Chairman.*) You are the rector of Ingoldisthorpe in the county of Norfolk?—Yes.

6524. What is the size of your parish?—The population is 370, and the acreage about 1,300.

6525. Is it part of a large union?—It is part of the union of Docking, which is a very considerable union.

6526. Are the board of guardians of that union for purposes of nuisance removal your sanitary authority?—Yes, I believe they are so.

6527. Have they appointed an inspector of nuisances?—They have appointed inspectors of nuisances, but have lately changed the inspector for my district.

6528. What is the total salary of all the inspectors?—That I am not prepared to speak to, but I believe it would amount to 80*l.* or 100*l.* a year.

6528*a*. What is the amount of salary of the inspector for your district, and what is that district?—The present inspector receives 12*l.* per annum, and for that salary inspects six parishes, a district seven miles long by two or three wide; the late inspector received 20*l.* per annum.

6529. And for 12*l.* does he undertake the inspection of the nuisances of that district?—He has undertaken it, and at present the guardians are thinking of reducing the salary.

6530. What is the occupation of the present inspector?—He is a bookseller, a builder, an auctioneer; in fact, a gentleman of all sorts of trades.

6531. Has he time to inspect the nuisances?—I certainly should say he had not.

6532. Practically, do you believe that the nuisances are properly reported?—I think not. In fact, I do not see how they can be, when the inspector never, as far as I know, visits the parishes in his district unless specially sent for.

6533. Is the vestry of your parish active in sanitary matters?—Decidedly not.

6534. Has it done anything at all in that way?—It has never done anything, unless when I have compelled it by myself applying to the board of guardians.

6535. Could you state any cases in which you have applied to the board of guardians to put your vestry in motion?—In 1862 there was an outbreak of diphtheria in the parish, when almost every cottage was visited by that disease. I applied to the then union medical man to look at a particular nuisance which, in my opinion, was the cause of the diphtheria, but he refused to do it, and it was not until I had applied to the chairman of the board of guardians, and a long communication had taken place between us, that the nuisance was removed, and from the date when the nuisance was removed, which was in the shape of a stinking cesspool, then the diphtheria abated. I must mention that afterwards they removed the medical officer from his post as inspector of nuisances on account of his refusing to take notice of similar circumstances in an outbreak of typhus fever in this parish in 1865.

6536. Was that his duty as medical officer?—He was appointed the sanitary officer for his district of the union.

6537. Had he a special salary as sanitary officer distinct from his medical salary?—Yes, he had at that time.

6538. Can you inform us whether other parishes in the union have more active vestries than yours in sanitary matters?—With the exception of Docking, all the other parishes, I think, are just as bad as my own.

6539. Is it your opinion that those parishes have nuisances which have been unremoved from the want of a sanitary authority?—I can speak decidedly to that being the case in many parishes.

6540. And do you believe that ill-health is the consequence?—There has been a great prevalence of low fever in consequence in many parishes. I could mention one instance particularly, in the neighbouring parish of Snettisham, where disease has been occasioned entirely by neglecting sanitary precautions. The disease is remittent fever, turning into typhus of a bad character.

6541. How do you think that a more active sanitary authority could be established for the whole of the union?—The only way to do so would be to compel periodical meetings of a local board, and not leave it to them to meet just when they please.

6542. What should the constitution of the local board be?—I think it would be well if there was a local board in every parish, and that that board should be constituted of the resident minister, the church-

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wardens, the overseers, the guardians, and the highway surveyor.

6543. Do you think that that would be a better body than the vestry, and also a better body than the board of guardians?—I think it would be a more ready means of getting rid of nuisances.

6543*a*. Why do you think so?—Because the members living on the spot would become more quickly acquainted with nuisances or defective sanitary arrangements. Under the present system the board of guardians can know nothing of these cases unless informed by the local committee appointed by them, who seldom meet, and the members of which are frequently personally interested in burking any such inquiries. Private individuals are unwilling to interfere from fear of exciting personal dislike and odium towards themselves.

6543*b*. What duties would you assign to the local board?—The examination of sites for cottages, the recommendation of such cottages when built for a licence, the enforcing the making of wells, the abatement and removal of nuisances, the forming of public drains, the preventing of the exposure of infected persons, in fact, the control and regulation of all sanitary measures; it ought also to have authority to provide all things necessary for the better nursing and quicker recovery of the sick poor.

6544. What relations would such a board have to the board of guardians?—It might be put under the control of the board of guardians or under the control of the magistrates.

6545. Which do you think would be the best?—I myself think it would be better that it should be under the control of the magistrates. I have very little faith in our boards of guardians, as they are generally composed of farmers who do not like expenses.

6546. Are the expenses high in your union for local purposes?—I think not.

6547. Can you tell us at all how much in the pound you have ever paid yourself?—The whole of our rates for poor law purposes are about 2*s*. to 2*s*. 6*d*. in the pound, not exceeding 2*s*. 6*d*. at any time.

6548. Are there any other rates to be added to those?—There are the highway rates, but there are no other rates which would at all affect sanitary purposes; at least there is no district sanitary rate.

6549. Supposing such a board appointed as you suggest, do you believe that sanitary works would be carried out?—I think some party would even then be required to compel it to carry them out, for I think if it was left to such a board it would not do it willingly.

6550. How would you deal with such nuisances as you have been mentioning, creating disease in various places?—I would compel that board to meet every fortnight as an open board, to which any person having a nuisance to complain of might appeal for the removal of that nuisance, and in case it declined to act I would give a power of appeal to the complainant to the magistrates in petty sessions.

6551. What defect is there in the present system under which an inspector of nuisances if he was active would report and the case would be brought before the magistrates?—The inspector of nuisances to my own knowledge now says that he cannot act without the consent of the local board, and that local board is very seldom or ever called together.

6552. Is not the local board the board of guardians by the law as it now stands?—They have appointed another local board in the parish of Snettisham, consisting of a number of tradesmen, who are guardians, and I believe they have made several such districts with local boards.

6553. But they do not supersede, do they, either the power or the responsibility of the board of guardians by the existing law?—The board of guardians decline to act till a report comes from the local board.

6554. Then they are in point of fact in default of their own duties?—I should imagine so.

6555. Do you think that any large drainage works ought to be carried out in rural districts?—Not generally in villages. I think what is required is to compel the owners of property to properly drain their own properties.

6556. In rural villages, such as your own, how is the sewerage disposed of; for instance the contents of privies and places of that sort?—Very often they are led very improperly into open ditches, and those ditches are carried on for considerable distances, as in my own parish through the marshes into the sea, which is about two miles away.

6557. How do you think that it ought to be disposed of?—I really think the system of the old privy was better than the present one, where it was removed immediately and directly from the place and carried out and employed upon the land.

6557*a*. Can you suggest any remedy for the abating of nuisances, such as dust pits, which frequently contain decaying vegetable and animal matter, and are placed close to cottages?—Yes; I would cause the frequent removal of such heaps to a waste place at some little distance from the village.

6557*b*. Could such waste places be found?—I think they generally might, if not, a small piece of ground might be purchased for a small amount, and the expense of this and the removal of the rubbish would be quickly defrayed by the sale, by the local board, of the heap for agricultural purposes.

6557*c*. Would there be any value in such heaps?—Yes; I am myself glad to purchase stuff of this kind for garden and land manure at 2*s*. 6*d*. to 3*s*. 6*d*. per load.

6558. And you do not think that anything more than that can well be carried out in rural districts?—I think that the expense would be too great to adopt any other plan.

6559. How are you supplied with water in your parish?—We are supplied with water by wells.

6560. Is it good water?—The water is really very good, but very often the drainage of the different buildings is led so near to the wells as to soak into them.

6561. Do you believe that the people are drinking polluted water?—Very often they do drink I have no doubt water of that character. In fact I can mention one case which has taken place lately, not in my own parish, but within my own knowledge. In the parish of Litcham, in Norfolk, a fearful attack of typhus fever broke out, which is attributed entirely to the sewerage having got into the wells and polluted them. I was assured by a well-known medical man in Lynn that that was the case, and that he had good authority for stating that the whole of that attack of typhus fever broke out from the pollution of the water.

6562. By whom are the cottages in your villages generally built?—They are built partly by landowners and partly by speculators.

6563. Is there any great difference in those two classes of cottages?—A very great difference indeed. The landowners take care of the sanitary arrangements of the cottages, which are completely neglected by the speculators.

6564. I suppose that a speculator, in order to get an interest upon his outlay in building cottages, must build a very poor sort of cottages?—He must build very inferior cottages to get any return.

6565. What do you suppose is the cost of a cottage in your parish?—The cost of many of the cottages in my parish could not have exceeded 50*l*.; they have been very often converted from old stables and old farm buildings into cottages.

6566. What sort of rent do they pay?—Many of the cottagers pay as much as 4*l*. 10*s*. to 5*l*. a year for a cottage with a little piece of garden. In the parish of Snettisham I have lately had occasion to visit some cottages which have been built upon a very small space, and in one instance seven cottages, containing only one sitting room and one bed room, and such cottages are very common, are let at 3*l*. 10*s*. each.

6567. Do you believe that such cottages are prejudicial to the health of the inhabitants?—I have not the slightest doubt of it.

6567*a*. What are the chief defects in the cottages you mention?—Thinness of external walls, small size of rooms, want of ventilation, and on the ground floor brick or tile instead of wooden floors, and sometimes windows which cannot be opened, and want of fire-places in sleeping-rooms.

6567*b*. Are cottages always built in healthy situations?—No; the position of the cottage, when built by a speculator, is more frequently determined by the cheapness of the site than by any other consideration.

6567*c*. Are cottages built by landowners subject to the same objection?—Yes; because the spot chosen is generally so chosen on account of the small value of the land, and its uselessness for agricultural purposes.

6567*d*. Will the situation, in your opinion, be frequently seriously injurious to health?—Yes, I think so. Cottages are frequently built in marshy situations and by stagnant water, or at the foot of hills where there is no free circulation of air, and with a northern or western aspect, instead of south-east, south, or south-west.

6567*e*. What remedy would you propose?—That no cottage be built until the situation be first examined as respects its healthiness, and until the local board, being satisfied of the healthiness of position, give a licence for the building.

6568. What remedy do you propose with a view to improve the condition of cottages?—I would propose that no cottage should henceforth be built without consent or a licence first obtained from the magistrates, with stipulations as to the way in which it is to be built; I think that that would stop speculation.

6569. Do you mean by stopping speculation that cottages would only be built by the landowners, and that the landowners would build cottages without a profit?—I think so, decidedly.

6570. But still those cottages might not be supplied in sufficient numbers for the whole wants of the place?—I do not think they could be supplied by the landowners in sufficient numbers, unless there was a law to compel them to build according to the acreage.

6571. Would not that be a strong sort of law?—It would be a strong law no doubt, but it was one which was very much advocated by the tenant farmers on the previous commission for inquiry into the employment of agricultural labourers.

6572. Such a law was never proposed by any landowner, was it?—I think not.

6572*a*. Do you think landowners ought to be called upon to provide sufficient cottage accommodation for the labourers employed upon their own land?—I do think so, both because the possession of property entails, in my opinion, such duties, and also because the letting of the land could be carried on more economically, and the ratepayers would be relieved of an unjust tax enforced upon them through increased sickness, in consequence of the unhealthiness of the cottages inhabited by those, with whom in many instances they have no immediate personal or social relations.

6573. How much do you think that a good cottage, such as you think ought to be built, would cost in your parish?—You could not build a good cottage under from 130*l*. to 140*l*. with every proper arrangement for sanitary requirements.

6574. What would be a proper interest upon such an outlay in building?—Such a cottage ought to bring in from 10*l*. to 12*l*., which is perfectly out of the power of a poor man to pay.

6575. Would about 7½ per cent. be a fair building interest?—I take it at eight per cent.

6576. Which would cover the repair and gradual decay of the building?—Yes, and also loss by the non-payment of rent sometimes; that would give, I imagine, about five per cent. as the return for the money.

6576*a*. What leads you to this conclusion respecting the expense of cottages?—My personal experience. Having built two model cottages in my parish, the cost of which amounted to 320*l*., but as extra expense was incurred for ornament, I would strike off 40*l*. from the amount, leaving 280*l*. for the pair, or 140*l*. per cottage. A similar pair of cottages has been built in my parish for nearly 100*l*. less, but in this case the external walls were not, in my opinion, sufficiently thick, and several other important matters as regards sanitary arrangements were omitted; the extent of accommodation was, however, the same. These cottages, built by a landowner, are let at 3*l*. each. Mr. Frewer, the agent to the Marquis of Cholmondeley, also informed me that in his opinion no cottage containing sitting-room, scullery, and three bed-rooms could be built for less than 120*l*. each in this neighbourhood. Some most excellent cottages, such as I should wish to see on every estate, have been built in a neighbouring village, that of Fringe, by the landowners, but I could not obtain any accurate information as to the actual expense, though I should have judged them, from my own experience, to have cost at least 280*l*. to 300*l*. the pair.

6577. It would be a heavy national tax upon landowners to make them build at a loss, would it not?—The occupiers that we met on various occasions (I was with Mr. Frazer, the assistant commissioner for Norfolk, at several meetings,) were perfectly willing to have shared the expense of such cottages with the landowner, that is to say, to have paid an increased rent on account of having such cottages provided for them.

6577*a*. Do you think the occupiers of farms would be willing to pay an increased rent in consideration of cottages for their labourers being provided by the landlord?—I am convinced they would; from what transpired at the various meetings I attended with Mr. Fraser, I feel certain that occupiers would be willing to pay at the rate of 5 per cent. upon such outlay.

6578. Are you decidedly of opinion that such a local board as you propose might have a control vested in it with respect to the character of cottage building?—I think it would be a very great improvement in our country villages that it should have such power.

6579. Do you think that the landowners in your neighbourhood would willingly submit to such a control?—I am afraid not.

6580. In what proportion of the acreage do you propose the cottages to be built?—I should think that there ought to be at least two cottages to 250 acres, looking at the number of persons required to work a farm of that size.

6580*a*. On what data have you made this statement?—On the fact that in this neighbourhood two and a half men or two men and a boy are sufficient for 100 acres, and these five persons could be accommodated in two or three cottages.

6580*b*. Do you think it fair to require licences for the building of cottages, and this when the landowners may be opposed to such a system?—I do, because I think it unfair that the general body of ratepayers should have the rates increased on account of sickness caused by the unhealthiness of cottages built by mere speculators or landowners, careless about the duties and obligations of property. In reality the ratepayer frequently pays out of his pocket in order to increase the gains of some speculator, who may live miles away from the place where the cottages are situated.

6580*c*. Would it, in your opinion, be right to require by licence that the cottage accommodation should be proportioned to the number of inhabitants?—It would on all grounds. Neither physically nor morally can it be right that as many as 10 persons should, as is often the case, be crowded together in a sleeping room not more than 12 feet square. In case of families, at least three sleeping rooms should be provided, one for the father and mother, one for the sons, and one for the daughters.

6581. You stated that, although you have wells which in some parts of the country they have not, yet they are not sufficient to give a full supply of water, or sufficiently protected from pollution?—The statement I made did not apply to my own parish, but to one parish

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particularly, the parish of Docking, where the union is situated; they have there to sink about 300 feet to 400 feet for water, and in the summer time they are entirely deprived of water and have to fetch it from long distances, sometimes two or more miles.

6582. In the control which you propose to be inflicted on cottage proprietors, what regulation would you propose with regard to wells?—I would propose that where it is possible, and a well is not too expensive, there should be one well placed to three or four cottages. In cases where from the depth that they would have to go it must become very much more expensive, I would then put a public well into the place, and if the occupiers could not pay for it I would charge it upon the highway rates.

6582*a*. Have you known any such great want of water in your personal experience?—Yes, in the district of Harlow Bush, in the parish of Harlow, in Essex. There the inhabitants depended almost entirely upon pond water for their supply. The ponds frequently dried in summer; the distress was consequently great, and the healthiness of the village was materially impaired. I mention this as I lived in that district for five years, and was subject to the great inconvenience and injury to health. I believe a public well has been since sunk to the depth of between 200 and 300 feet. The expense was defrayed by subscriptions.

6583. Mr. Henley was informing me of a similar difficulty in getting water in his part of England, and he told me that they had lately adopted the plan of making tanks to save the rain water; have you done anything of that sort?—I propose as a remedy in places where water could not be readily obtained to make such tanks.

6584. Have they been made?—No, they have not been made in my neighbourhood, for in my own parish we get water at a depth of about from 12 to 20 feet.

6585. If you had such tanks made, how do you think the expense should be borne?—I think that it must be thrown upon the highway rates.

6585*a*. Would such tanks require to be fitted with filtering apparatus?—Certainly they would, otherwise they would quickly become of little or no use.

6586 Has the Highway Act been adopted in Norfolk?—It was adopted in several unions, I believe, but in our union, the union of Docking, we have gone back to the old system, because the Highway Act has failed.

6587. Was it adopted in places and not generally?—It was adopted in the union of Docking, and it failed so completely in every respect that we went back to the old system.

6588. How do you mean that it failed?—It failed in the money being embezzled, and in the surveyor not doing his duty to the roads, and the roads getting into a worse condition than they were before.

6589. That was rather a failure of operation, was it not, than a failure of principle?—It seemed to fail from the fact of employing a surveyor over too large a space of ground.

6590. At all events you cannot look to the highway board for any rural authority at present in Norfolk?—No, we could not in our part of Norfolk; not in the union of Docking.

6591. Did the highway board district when formed coincide either with the petty sessional division or with the union?—The highway board district, when it was formed for Docking, coincided with the union.

6592. Were the waywardens and the guardians in many instances the same persons?—Yes, they were generally so.

6593. Do you think if it could be carried out that the waywardens and the guardians would make a good body for local government generally?—I should have the same objection to them that I have to the board of guardians at present, that they are men who do not like progress, and do not like laying out money upon improvements of any kind.

6594. Is the privy accommodation sufficient in your parish?—Latterly it has become so, but when I first went into the parish, 14 years ago, there was scarcely a privy attached to a cottage.

6595. Is there one now attached to every cottage?—No, not to every cottage.

6596. Do you consider generally speaking that the local rating is heavy in Norfolk?—I think it is.

6597. And should you be afraid that in establishing local boards for all those purposes it might lead to an undue expenditure of money?—I do not think that would be the case, for they are very cautious as regards spending money in Norfolk, at least in the neighbourhood, for public purposes.

6598. The sort of board, which you propose, would probably be more liberal, would it not?—No, I think there would be such a large proportion of farmers on that board that expenditure would be stopped.

6599. Do you think that by the combination of various boards, such as boards of guardians, highway boards, and local boards, as you propose, the expenditure of money on local objects might be economized?—I think so.

6600. Are you pretty conversant with the Sanitary Acts?—I have read them up lately, particularly the Act of 1866.

6601. Do you consider them complicated?—I should think not. The Act of 1866 appeared to me to be clear.

6602. There is a sort of conflict of authority between the vestries and boards of guardians, for instance, which might be simplified, might it not?—In our little country villages we have very little to do with the vestry; it only meets once a year, and then for church purposes.

6603. How are your cottages provided with medical attendance?—Very badly indeed.

6604. Why so?—Partly because our board of guardians confine the attendance of the union medical man to families where there are three or four children under working age, and refuse it in all other cases; and partly because of the inefficiency of the medical man himself.

6605. Which arises, I suppose, from insufficient pay?—Yes; I suppose that that is one great reason; if the pay was more ample we should have a better class of medical men seeking the appointment.

6606. Are there equal facilities for obtaining medical assistance in all the unions about you?—I think some are better off than others.

6607. Can you state any differences that you are acquainted with?—I should speak chiefly of the different character of the medical men in different districts. There is more care taken to procure efficient medical men in some unions than in others.

6608. How would you alter the mode of paying for medical assistance?—We must be called upon to pay larger rates, and I believe that would be true economy.

6609. The laborour's health is capital, and you think that if he were kept in better health it would pay?—Yes, and I think it would also save the ratepayer very considerably.

6610. Can you mention any instances in support of such an opinion?—In looking over the deaths in my own parish I find that two or three deaths have taken place wholly and solely from the want of proper medical attendance, and their families therefore have been thrown upon the ratepayers at an early period, which would not otherwise have been the case.

6611. Do you think that any improvement could be made in the appointment of union medical officers?—Decidedly.

6612. Will you state any alterations which you would propose, either in their appointment or in their duties?—I would propose, with respect to their appointment, that two or three medical men should be nominated by the board of guardians to the Poor Law Board in London, and that the appointment should be made by the Poor Law Board, of course founded upon the testimonials forwarded to them. With respect to the duties of the medical men, I think that very great

improvements might be made in many respects, that is to say, as far as the health of the poor is concerned.

6613. Could you suggest any improvements?—I would suggest that there should be dispensaries placed at different portions of the union, so that the poor should not have to go the long distances that they have at present. They travel very long distances to procure the medicine. They travel in my own union sometimes seven and eight miles to get the medicines, and they have to wait a very considerable time for the return of the medical man.

6613*a*. Would it be advisable to permit labouring men to procure medicines for themselves and their families at these dispensaries?—It would. In my own parish I keep a large supply of medicines, and as I give them away free, the labouring poor apply to me at the commencement of the disease, and thus many serious illnesses are prevented. The medical officer for Docking told me that he found it a saving to himself to attend at once to any cottager who sought his advice, even though unprovided with a medical order, because by giving a prescription to be made up at the chemists he cut short disease, which would otherwise require a lengthened attendance on his part. A neighbouring clergyman also told me that, by furnishing medicines to his parishioners, he saved himself and the medical officer much expense and trouble, and that the medical officer had thanked him for taking the trouble.

6614. Is there any defect in the reports or diaries kept by the medical officer?—I should think they were very defective. I am not prepared to speak to that, not being a guardian myself, but from what I know, and from what I can judge of those reports, they are of very little use when so given in; they are very often made up merely to suit the occasion. I can give an instance. Being present at the board of guardians, there was the report that a man had got disease of the head, and the relieving officer asked for two nurses to attend this person. When the board of guardians inquired into it the medical certificate was simply these words, "disease of the head," but it turned out that the man had received a most serious accident. He had been kicked, and a small spicula of bone had been driven in on the brain, and that man was really raving mad, and he ought to have been in the hospital instead of being where he was at that time, and yet that was returned as common disease of the head.

6614*a*. Do you think that supervision of the union medical officers is required?—I am certain it is in many cases; and I believe that one of the greatest boons to our labouring poor would be to require that the medical officer should be obliged to give a prescription in every case he visits, and also to keep a diary, in which he should record every case, the nature of the disease, the length of its continuance, the result, whether fatal or not, the number of visits paid, and a copy of the prescription given, and the amount of assistance afforded in the way of wine and nutritious food. Such a diary would, however, be useless unless it was open to the periodical inspection of a medical inspector to be appointed by the Poor Law Board, or Board of Health in London. I am certain that no efficient medical attendance as regards our sick labouring poor and their families will be obtained unless some such stringent measure as regards the inspection of some of our union medical officers be enforced. Of all measures to arrest and prevent the spread of disease, I think this most important, as it would keep unprincipled, inefficient, and inactive union medical officers, of whom I fear some are to be found in almost every neighbourhood, up to their duties.

6614*b*. Should the appointment of union medical officers be, as now, for life?—Certainly not; their appointment should not be for a longer period than three years, though it might be renewed for a similar period if no objections were taken to the reappointment by the board of guardians, magistrates, or a considerable number of ratepayers.

6615. Have you any suggestion to make as to establishing village hospitals?—Where they could be established I think they would be of the very greatest advantage; of course the difficulty is the expense.

6616. Have you anything to say with regard to the establishment of nurses for sick paupers?—I think in that case if village hospitals could be established there would be no lack of nurses, ladies would themselves undertake the nursing which they are now prevented from doing by the peculiarly bad system of our cottages, so that no lady can go and nurse a sick person in our cottages.

6617. Does your suggestion as to improving the cottages not only refer to the number of rooms, but also to the size and the ventilation of the rooms?—Yes, decidedly to the ventilation.

6618. In the want of this medical assistance, do you supply it yourself in any sense?—I have been myself obliged for the last 10 years to attend personally the poor of my parish, in fact to attend them really as a medical man.

6619. Do you happen to possess medical skill yourself?—I have read up and studied the subject, and so far I have lost but few lives; and I trust therefore that I may have done some good, but I should have much preferred having a medical man to attend my sick poor. I may mention that in the case of diphtheria I had 120 different cases, more or less severe, under my own charge and care.

6619*a*. Would it be advisable that the more expensive medicines should be provided at the charge of the union, and not as now by the union medical officer himself?—Decidedly so. Considering the smallness of the union medical officer's pay, it is impossible for them to provide quinine, cod liver oil, and other costly drugs, without which in some cases the patient cannot be cured, and may linger on at the expense of the parish for months or years.

6619*b*. Do you think the supply of wine and nutritious food to such labouring poor by the union sufficient?—Certainly not. I know cases in which such patients would have relapsed, and probably died in consequence of the union medical officer refusing such assistance, had not private charity interposed to afford such aid.

6619*c*. Is there much difference in the supply of such assistance in different unions or different districts of the same union?—There is.

6619*d*. Upon what does this depend?—Entirely upon the character and humanity of the different boards of guardians and the medical attendant. In some unions the assistance thus afforded is much greater than in others; and in some the facilities for obtaining such relief are great, whilst in others obstacles are purposely put in the way of the sick labouring poor obtaining such assistance.

6619*e*. What remedy would you propose?—I would give the local board the power of affording such relief in cases where they are convinced the medical officer fails in his duty.

6620. You have mentioned the difficulty of getting nuisances removed; is there equal difficulty in regulation of such places as pigsties and accumulations of dirt in places where they ought not to be allowed?—There is a very great difficulty with respect to pigsties. Pigsties are often built directly at the back of cottages, and of course the cottager is very unwilling to be deprived of the right of keeping them there; the neighbours will not themselves take steps to get them removed, and the parish officer will not take the trouble of doing so.

6621. What arrangements are made as to keeping the dead bodies of persons who die from infectious diseases until their burial?—I am sorry to say that is one of the greatest causes of complaint in our villages. In the case of diphtheria which I have mentioned there were in one small cottage with two rooms (a sitting room and a sleeping room), eight persons ill at the same time; that one of the family was lying dead below, that two were dying in the upper room, and all the rest of the family were

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sleeping in one or the other of those rooms exposed to that infection.

6622. Would you propose to have a mortuary in every village?—I think it would be a very great assistance in the stopping of disease; I would also say that I think that in the case of infectious diseases persons ought to be compelled to take the bodies to a mortuary; but in the cases of other diseases it should be a voluntary act on their part.

6623. Do you think that the spread of small-pox might be more effectually prevented by legal measures?—By more stringent measures I am confident that it might be.

6624. What measures would you propose?—I would propose that very severe penalties should be fixed upon any person appearing in public before the disease has really disappeared. In my own parish lately we had an outbreak of small-pox which took place in consequence of one young man, in spite of my remonstrances, walking through the streets before he was cured.

6625. Do you consider the Vaccination Act sufficient?—No, it is set at defiance so frequently.

6626. How would you have it more easily enforced?—It is a difficult question, because I find that some of our magistrates are quite disposed to pass over that Act; that they themselves think that it is a very harsh and cruel Act, and that people ought not to be compelled to vaccinate their children.

6626*a*. Could you suggest, as regards vaccination, any further means of so employing it as to prevent the spread of small pox?—I would both permit and recommend the re-vaccination of even grown-up persons at the public expense, whenever the disease may make its appearance in any country village.

6627. Do you think generally that there is any necessity for more stringent legal measures to enforce the carrying out of sanitary arrangements?—I think so.

6627*a*. In what respects especially?—In respect of persons suffering from infectious or contagious diseases travelling in public conveyances, such as railway carriages, &c.

6627*b*. Have you any remedies to propose?—Yes. I would permit no person who has been afflicted with an infectious or contagious disease to travel without a certificate from a medical man stating that it was safe, as far as the public were concerned, for him to do so. I would also require railway companies to keep particular carriages for the conveyance of such persons.

6628. Do you consider that the attendance of unqualified persons increases the fatal effects of disease?—In my own neighbourhood the attendance of unqualified persons has stopped disease rather than increased it.

6628*a*. Do you really think that it would be unjust and injurious to the public benefit to prohibit strictly the attendance of any but legally qualified practitioners?—I am confident the number of deaths would be greatly increased. The attendance of unqualified persons becomes in some districts and neighbourhoods a matter of absolute necessity, and to prohibit it would be to cut off every hope of recovery, and to cause persons to die without any assistance.

6629. Could you make any regulations to sanction such attendance?—I think it would be well that they should pass some examination as to their knowledge of medicine, and as to their knowledge of disease, some slight examination to show that they were not totally ignorant both of the nature of disease and of medicines.

6630. Would you actually license them?—I would give them an inferior licence; I mention that particularly, because there is one able attendant in my district, a chemist, and he does attend very largely upon the poor, but has been too poor to go through the hospitals. He has been assistant to several eminent medical men, but his means have not enabled him to go through the hospitals.

6631. Do you believe the registration of the cause of deaths in your part of the country to be accurate?—Certainly not.

6632. How would you propose to make it more correct?—There would be very great difficulty with respect to the registration of the causes of deaths. Persons often die without the attendance of any medical man, and often from sudden causes, such as apoplexy, and many other causes, and then, as no medical man has seen them, there can be no certificate as to the cause of death.

6633. Can you suggest any mode of making the registration of the causes of deaths more accurate?—In a case of that kind I think the relieving officer or registrar ought to visit the house, and ascertain as far as he can from the inhabitants what really was the cause of the death of the person. I would mention one particular case which took place, a case of hæmorrhage, where I believe a woman died from cruelty on the part of her husband. That case was not looked into at the time, and the medical man at the end of the week went there, and reported that she died from natural causes. I have every reason to believe that she died from violence on the part of her husband.

6634. Do you believe that there is much infanticide in rural districts?—A great deal of quiet infanticide. I use the word "quiet" because it is not done in a way that the law can take notice of. I mean this, that in the case of wishing to get rid of children, particularly illegitimate children, the mothers or parents expose them at night or late in the evening with their breast open to the cold wind, which sets up inflammation of the chest. Besides that, a mother with a child at the breast will go out very early in the morning, and not return till late at night, and during the whole of those hours the child is often left in the care of another child, only six or seven or eight years of age, perfectly incompetent to supply it with food. And in such cases I am prepared with a statement to show the number of deaths that take place under five years of age as compared with the general amount of death.

6635. Do you believe that to be generally the case?—I am afraid it is too general.

6636. Can you give us the relative number of deaths of illegitimate children as compared with those of legitimate children?—In my own parish in 15 years there have been 15 illegitimate children born; five of these children were taken care of by the grandmothers and lived; three of them were taken from the parish, and I cannot say whether they lived or died, and the other seven under the care of the mothers all died. I am speaking entirely of my own parish, from my own personal observation. I may mention that so convinced have I been of the quiet way of getting rid of children that I have preached upon the subject from my own pulpit, and taxed the mothers with it. I would mention one other case. I was very lately called upon to baptize a child privately. I find that they do not like children dying unbaptized, because they are then refused the funeral rites of the church. I went down to the mother of this illegitimate child, and said, "This child is not ill enough for me to bap-"tize, although I know exactly what you mean: this "child is to die;" and I said, "I tax you with the "intention of this child dying, and I shall not bap-"tize it on that account, because if I baptize it you "will have the rites of burial which are all you care "for." I said, "Remember, if that child dies I will "have a coroner's inquest upon it, and inquire into "the circumstances." That child is now alive, but one person in the cottage said to me "There is a time for every one to die, sir." "Yes," I said, "I know that, but you may fix your time."

6637. Do you think there should be something in the nature of a central board of health?—I am afraid that a central board of health would labour under the disadvantages of the board of guardians at the present time, namely, the difficulty of putting it into work. it is the length of time before you can get a nuisance removed which is injurious to health; that is the disadvantage at present. I mentioned that it took me a month to get the cesspool which was the cause of the diphtheria in my parish removed. I may mention another case of typhus fever breaking out in my parish, in which I was attending the people myself,

and it arose entirely from some privies being placed against the walls of a house or within a few yards of the back doors. A medical man was then the sanitary officer, and was called upon to remove them, which he declined to do, and it was not until I threatened to bring down an officer from the Board of Health in London that I could get them removed. I think it took me a week or ten days before I could get removed what might have been done in a day.

6638. What kind of central board of health do you refer to in your last remarks?—I would have a central board of health as a sort of control over the local boards.

6639. Where?—It might be either in London in the way of a general board of health to which the local boards must report, or it might be done as now by the board of guardians being the central board; but I would have the village local boards in addition, to put sanitary measures immediately into operation.

6640. Do you mean something between the board in the parish and the Home Office?—Yes, something of that sort.

6641. Supposing that there was such a central board of health, what duties would you assign to them?—Putting itself in correspondence with the local boards, and giving directions as to the way of carrying out those measures which would be most conducive to the sanitary state of the people.

6642. Should such a central board have inspectors, both medical and for ordinary sanitary purposes?—I think decidedly a medical inspector is required, both for that purpose and to exercise some control over the union medical officers.

6643. Would there be also surveyors and engineers and similar officers of that description?—I think that might be done by calling in a surveyor or an engineer where it was deemed necessary, instead of having regular paid officers.

6644. What would be the business of the medical inspector?—I should require the medical inspector, first of all, to see that the union medical officers performed their duty faithfully to the poor. It is on that account that I propose that a log book or diary should be kept by every union medical officer in which he should enter every case, the length of the case, the number of times he attends, and the prescriptions he may give. I think that that is a most important thing, with respect to prescriptions being registered.

6645. Could you suggest any alterations in the Sanitary Act of 1866 as applicable to country villages?—All I should suggest is, that it should be applied more stringently to country villages; it seems to be now considered as applicable only to towns.

6646. Do you think that without alteration it might be made applicable to country villages if only it were enforced?—I fear not, because of the expenses of it.

6647. What are the expenses that you allude to?—I think there is the power of raising a sanitary rate, which, when put over a large field, would become small, but when confined to a little village would become very oppressive and very heavy.

6648. Do you mean for such works as water supply?—Yes, for water supply, and for making sewerage when it was required.

6649. Might not several country boards unite for such purposes?—I think that might be done.

6650. You are not afraid that they would go to too great an expense?—No, certainly not. I think that that is the one thing which they would not do. They are very tenacious of laying out money upon sanitary improvements.

6651. Can you state generally the death rate in your parishes of late years?—I could give my own parish, of which I have prepared a statement.

6652. For how many years?—For over 15 years; it has varied very much indeed. The population is 370, and the average is as nearly as possible 6·7 deaths for the 370, or about 20 per 1,000.

6653. Does your statement show the relative proportions of deaths to the different ages and classes of diseases?—Yes; two were at 90 or above, four were at 80 or above, 11 were at 70 or above, eight were at 60 or above, six were at 50 or above, six were at 40 or above, seven were at 30 or above, six were at 20 or above, three were at 10 or above, 13 were at five or above, six were at one or above, and 29 were under one, and the prevailing causes in my neighbourhood are consumption and asthenia. I suggest that it is entirely as much from want of nourishment and support as anything else.

6653*a*. Will you state whence you were able to get your statistical information as to the causes of death, &c.?—I have been in the custom of always placing in the margin of the funeral registers the cause of death whenever I knew it or could ascertain it.

6653*b*. Do you think any beneficial addition could be made to the particulars required in the registers of funerals?—I do. I think the minister could, with very little trouble to himself, ascertain the cause of death, and then insert it in an additional column, to be introduced into the books for that purpose.

6654. (*Earl of Romney.*) It seems upon the whole that in those matters which are left to the control or discretion of individuals in your parish the duties are generally neglected?—I should consider decidedly so.

6655. And then with regard to those matters for which the law intends to provide a remedy from negligence in putting the law in force, there again the matters are in a very bad state?—In a very bad state on account of not putting them in force.

6656. Then the whole of that state of things requires complete revision?—It does.

6657. And you suggest various remedies, the appointment of officers, the better payment of medical officers, and various things of that sort?—I have suggested those things.

6658. You are aware that such a system would completely change the mode in which those matters have hitherto been carried on in this country, and would necessarily cause a very large expenditure?—It would cause considerable expenditure, but I think that that expenditure would really be met by there not being so many calls upon the union. That the disease being checked, there would not be the same number of widows seeking for relief from the board of guardians, nor would there be the same expenditure in cases of long continued illness. I think it would be good political economy to spend money to check disease.

6659. You stated, with regard to the administration of medical relief to the poor, that you thought in some cases you could show death had been caused by negligence on the part of the medical officer attending?—Yes, I could prove it in some cases.

6660. To what extent should you wish to see relief given to what are commonly called the poor; do you consider that every person who lives by wages ought to have medical relief at the public charge?—I consider that every cottager who cannot get more than 12*s*. a week wages ought to have such relief gratis. I put it upon these grounds, that if he or any member of his family has a serious disease, and the medical man has to pay three visits a week to that cottager, he cannot pay him less than 2*s*. 6*d*. each visit, which would be 7*s*. 6*d*. out of the whole week's wages, and that where such expense is incurred it plunges a poor man into a debt which he never recovers from, and he is in distress ever after.

6661. I suppose you would like to see medical relief made distinct from ordinary relief from the poor rate, so that a man should not be considered a pauper who receives only medical relief?—Decidedly so.

6662. Amongst other things you stated that great delay takes place with regard to removing nuisances, and you thought that working through a board was too slow in its operation; if the law was amended, and upon the inspector or whatever officer is appointed for the purpose having given notice to the party of the existence of a nuisance requiring him to remove it, and the person failing to do so, the inspector then had the power to remove it himself and charge the

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person offending, that would remove that evil, would it not?—If the inspector would act, but the inspector is often one of their own class, and declines to act against his friends.

6663. With power on the part of the inspector one would suppose that he would do his duty; and if there was sufficient control he probably would be compelled to do so?—If you could make the inspector act, I think that would remedy the evil. The great difficulty is, that the inspector, as now chosen, generally is a small farmer or tradesman, and does not like to offend those of his own class.

6664. There is that defect existing throughout every arrangement in that neighbourhood?—Yes, I think so.

6665. (*Mr. Powell.*) Do you think that the police might usefully be employed as inspectors of nuisances, or in a similar capacity in carrying out the laws for the preservation of the public health?—I think that the police might be employed with respect to the removal of nuisances and sanitary measures, if they got power from the magistrates to remove offensive pigsties, or prevent the exposure of persons labouring under disease.

6666. Do you think that they might be employed so as to supersede the necessity of having any other inspectors of nuisances?—No, I fear not; their duties are too many now.

6667. The magistrates have authority over the police, but they have no authority over sanitary affairs in the district. Do you think that it would answer to employ policemen, who are governed by the magistrates, in sanitary matters over which the magistrates have no control?—I think not. I think that the magistrates must have the control of the policemen in that case.

6668. But the magistrates are not the sanitary authority?—But I would give the magistrates more power over sanitary measures. I conceive that they would act better than the board of guardians by far.

6669. Do you think that there would be any resistance on the part of the people to the employment of the police, that is to say, do you think that it would create any dislike to the visits of the inspector if he were a policeman, and that obstacles to carrying out the law would be thus raised?—I think if he was required to go in plain clothes it would not, but if he visited a cottage in his police dress it might be supposed then that he was going there for some other purpose.

6670. But a policeman is generally known, is he not, whether he is in plain clothes or in his official costume?—But it would become afterwards known that if he went in plain clothes he was not going for the purpose of apprehending a thief, or that sort of thing. That would be the great difficulty, that his visit to a cottage in his regular dress would lead to the idea that some offence had been committed by the persons in that cottage.

6671. If a policeman in plain clothes found out something which as a policeman he thinks he ought to take cognizance of, he would not, I presume, conceal his knowledge?—There would be a difficulty on that account.

6672. You stated that the vestries meet only once a year; were you quite accurate?—No, I should have corrected myself and said twice a year. They meet for the appointment of the parish officers and for that of the churchwardens.

6673. You remember that under the Sewage Utilization Acts, and under certain clauses of the Sanitary Acts, the vestry is the local authority?—Yes, but in little country villages the vestry never acts; it never meets for such purposes.

6674. In that state of the law, the vestry being the local authority, and the vestry not acting, there is practically no local authority?—There is practically no local authority.

6675. You said something respecting the ventilation of dwellings. Do you mean to define the size of windows and the way in which they open?—I have sometimes gone into cottages where the windows have been, I was going to say hermetically sealed, but so fastened up that they could not be opened at all. I remember on one occasion having myself to break a window to let the air into a room where there was a typhus fever patient.

6676. But is not that the business of the tenant rather than of the landlord?—Of the landlord decidedly, to take care that all the windows in a cottage should be made to open.

6677. Are not there some cases where the tenants seem to have a great horror of fresh air?—Many tenants have that feeling; they consider warmth everything.

6678. Would you have the local authority interfere in that matter?—I think it ought to interfere in the case of windows being really fixed and fastened up.

6679. I mean in the case where the tenants have the appliances and will not use them?—In that case of course there are two questions; one is the question as to the inhabitants of the cottages themselves, but there is the further question, whether they do not spread disease which affects their neighbours. I think, therefore, that they ought to be compelled to look to those measures.

6680. Did you say that the guardians did not move or could not move, except when set in motion by some other body?—The guardians have appointed a local board of tradesmen in the neighbouring village to mine, who are supposed to look after all sanitary arrangements, and the guardians there decline to act till the local board, or rather committee of guardians, gives them intimation of a nuisance.

6681. Is what you describe as a local board that which is described in the statute as a committee appointed by the guardians?—Yes, I think they call it the board of health there.

6682. You call it the board of health, but it is really a board appointed by the guardians, and not a board appointed under the Public Health Statutes?—No, it is not that; I believe the members of the board are all guardians.

6683. You stated cases where mothers neglected their children and the children died, is that owing to the employment of women in some pursuit by which they obtain their livelihood?—In my own parish now there is not much employment of women in any way, so that it was done, I should say, wholly and solely to get rid of the burthen of the child.

6683*a*. But does such neglect ever arise from the employment of women in agricultural or other labour?—Yes; in many places the mothers give laudanum or other opiates to the children to still them whilst they are employed, and this acts most injuriously upon the children's health, both at the time and afterwards.

6684. Can you account for the prevalence of the impression which you mentioned, that the Sanitary Act of 1866 did not refer to country districts, but only to towns?—It is more ignorance than anything else. No one takes it up, and no one considers what the Acts are; in fact, I think that attention to Sanitary Acts is rather the exception than the rule.

6685. You are aware, are you not, of exactly the reverse, that it was rather intended to extend to country districts the advantage of sanitary laws which had hitherto been chiefly confined to towns districts?—I am aware of it myself, but I do not think that they are generally aware of it in the neighbourhood.

6685*a*. Do you mean that new Acts are little known in country districts?—Decidedly so. Any new Acts are probably known only to the magistrates' clerk, and not always to him. The magistrates generally take their law from their clerk. Boards of guardians too frequently make laws for themselves, or so interpret laws as to render them of no effect; and of course there is no remedy for this but the expensive one of raising a case, and obtaining a decision in a court of law, which few individuals would be willing to do.

6685*b*. Have any such cases occurred in your own knowledge and in your own union?—Yes.

6686. (*Mr. Bircham.*) Were you not brought a great deal in contact with the parishes of Norfolk as

assistant commissioner on agricultural labour?—No, not as assistant commissioner, but I went round with Mr. Frazer at the time that he was acting as assistant commissioner; and as he was staying in my house, and I had many conversations with him on this subject, I obtained much information respecting other parts of Norfolk.

6687. At all events you acquired a large experience of what the condition of things was in the employment of agricultural labour and in sanitary matters through a large part of the county?—I did through a considerable portion of the county, but especially in my own neighbourhood.

6688. In telling us as you have done about Ingoldisthorpe, is the Commission to receive that as a fair type of an ordinary rural parish in Norfolk, or is it in any degree exceptional?—I do not think it is exceptional. I should say that the only point in which it is exceptional, is that probably our medical man is an inferior type of medical man, but still I am aware that in many other places the same evil exists.

6689. I think the result of your evidence is that the law perhaps is strong, but sleeps by reason of the apathy or disinclination to spend money on the part of the ratepayers?—Yes, decidedly so.

6690. Has there suggested itself to you any outside pressure of a more or less local character that could be brought to bear upon the local authorities?—Yes, I think by the constitution of the local board which I mentioned, and requiring that local board to meet every fortnight, and giving the ratepayer, in case of their not so meeting, a right of appeal to the magistrates in petty sessions, and where he could prove injury done to himself from the non-removal of a nuisance, the whole of the local board should be finable, such a pressure would be obtained.

6691. We have had it suggested here that there might be medical itinerant inspectors bringing under the notice of the local, and possibly of the central authority in London, the mischiefs which they find on circuit; has any idea of that sort occurred to you as likely to be useful?—I am decidedly of opinion that with respect to the attendance of our union doctors some such superintendence is wanted; and although with respect to many of our union doctors they do their duties faithfully, yet there are certain men who take the post of union doctors and never attend to the duties at all.

6692. It would be a good public object to see that those men do their duty through the kind of officer I have named, and that officer could perform other work of sanitary supervision?—It should, in my opinion, be one part of their supervision to see that the union medical man does attend to the health of the people, and a second part should be to see to any sanitary matters which might be brought under their notice.

6692*a*. You are then decidedly of opinion that it is of great importance to have medical inspecting officers appointed by a central board of health in London, to carry out these two purposes?—Most decidedly so. I fully believe that such a supervision would be more effectual than any other plan to enforce the carrying out of sanitary measures, and improving the general health of the population.

6693. Do you think that too much duty in point of area is expected of union medical officers?—I think so. In fact, I deem it of importance that both area and population should be looked to in forming a district for an union medical officer.

6694. And in fact maximum of area and minimum of salary is rather the rule which obtains?—I think those are the two great evils. I conceive that a medical man, if he has to travel over a space of ten miles long by four or five broad, cannot faithfully do his duty to the people.

6695. Would there be a difficulty, as far as your experience goes, in finding a sufficient number of medical men, if the law interposed to prevent their taking charge of more than a certain area?—I would state that our own board of guardians will not remove a man they know to be inefficient, merely because they say that they can get no one else to supply his place in the whole neighbourhood.

6696. They decline to interfere with him, because they say that they can get no one else?—Yes, they say they can get no one else if they were to dismiss him.

6696*a*. Is that statement true?—I think it was, but there has been lately a change in circumstances in this neighbourhood in the creation of a new watering place on the coast, which has already caused other medical men to come there. The new watering place is distant about six miles.

6697. Is that in your experience likely to be true generally?—It is true in our own immediate neighbourhood decidedly. Ours is a poor neighbourhood with a large labouring population, and not a sufficient number of respectable families to encourage another medical man to come and settle down.

6698. I presume that your labouring poor are purely agricultural?—Purely agricultural.

6699. What is the average rate of wages?—The average rate of wages is now about 11*s*. a week.

6700. And you suggest that a cottage which you think a labourer's family should live in cannot be built there for less than 140*l*.?—I would not say as much as that, because I have instances at the present moment before me where a cottage has been built for 90*l*., which consisted of two bed rooms and one sitting room, but not with all those sanitary arrangements that I think there ought to be; they are not bad cottages, but they are not such as I think they ought to build.

6701. The rental at eight per cent., which seems to be your idea of the proper remuneration for outlay upon cottage building, would come to more than 10*l*. a year or 4*s*. a week out of the wages of 11*s*. a week?—Yes, cottagers could not pay that; it would be impossible.

6702. Do you think that there could be any legislation as to the provision of dispensaries in rural parishes?—I think that the medical officer might be required to keep stocks of medicines at certain points of his district, so that the poor should not have to travel, as they have now, eight and nine miles to fetch medicines. Many of them have to travel that distance in our union.

6702*a*. Where would you propose to keep such medicines, and under whose care?—I imagine there would be little difficulty in this respect. The medicines might be kept at the clergyman's, parish clerk's, churchwarden's, guardians, or some respectable parishioner's house. I do not think such accommodation would be refused to the medical officer.

6703. How are those medicines to be dispensed?—I would require that the medical man, when he had visited any case, should make up the medicines at the nearest dispensary, before leaving that particular neighbourhood.

6704. (*Mr. Hibbert.*) I understood you to say that you want some central power to compel an inspector of nuisances to carry out any work which he is required to do, when notice was given of any nuisance, because very often the inspector refused to get rid of it?—I would mention a case in point, which has come under my knowledge within the last six weeks. A case of remittent fever broke out in the parish of Snettisham, and application was made to the inspector of nuisances to remove a nuisance which caused that fever. He said he could not act in the matter without applying to the local board of health, as we may call it. They came and looked at it three or four times, and at the present moment that nuisance exists; they have thrown it off from one to the other, and of course the fever has continued, and has affected some portion of the parish.

6705. Would you think it an advantage to give power to summon an inspector of nuisances before the magistrates in any case of that kind?—I decidedly think it would be a great advantage that if he neglected his duty he should be called before the magistrates.

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6706. I suppose in many districts inspectors of nuisances are appointed at a very small salary, with the intention that they should do nothing?—In this case the salary is very small for the work that he has to do; he has to visit at a distance of six or seven miles many of the places which he must visit, and for this I find he is paid 12*l.* a year.

6707. I understood you to say with respect to sudden deaths that cases occurred sometimes which were not certified by a medical man; in such cases do not the police give information of the sudden deaths to the coroner in your district?—It is very difficult indeed to procure the attendance of the coroner in our district. In the particular case that I mentioned, which was a case of hæmorrhage, at my own suggestion the churchwardens and overseers did give notice to the coroner; the coroner came, and sent, after the lapse of a week, the union medical officer to look at the case, and it was then reported that the woman died from natural causes, upon which the coroner said that he thought the parish officers were very much to blame for having sent for him.

6707*a*. What was your opinion respecting the medical officer at that lapse of time being able to speak to the real cause of death?—I think it was impossible for him to do so.

6707*b*. Do you think he wilfully misstated the case?—I think that in this, as in other cases, he was disposed to take too favourable a view of the circumstances, and to prevent any inquiry taking place from the idea that such a course would be most generally acceptable to the people.

6708. Have you not a resident policeman in your parish?—Yes, in my own parish there is one.

6709. Is it not usual in your neighbourhood that the police give notice to the coroner of sudden deaths of that kind?—Not in our neighbourhood at all. The notice is given generally by the overseers or the churchwardens.

6710. You would recommend, as I understand, that instead of the present system you should have a local board elected in each parish?—I think that would give a more ready means of procuring the removal of nuisances.

6711. Would you make that board elective annually?—I propose that it should consist of the overseers and churchwardens, the guardians, and the highway surveyor or surveyors, so that they would be really elected annually.

6712. Would you allow the magistrates in the district to be upon the board ex officio?—I think it would be an advantage if they were so.

6713. Of course in such cases you would give the board full power not only over sanitary matters, but over roads as well, I presume?—That would be another question with respect to the highways.

6714. In your district how are the highways now managed?—They are now managed by the highway officers of each parish.

6715. Is not it desirable to have the power over the roads in the same hands as the power over the drains and sewers?—We found that when the power over the roads was put in the hands of a general highway board the same thing took place which I am complaining of with respect to sanitary measures, that there was great neglect and our roads were not mended.

6716. Supposing you had a local board elected in your own parish, I presume there would not be the same objection to giving them the power over the roads?—No, there would not then.

6717. You think that under the present sanitary Acts there is an indisposition to carry out any sanitary works. I presume that that is on account of the expense?—Entirely on account of the increased expense.

6718. Would you think it an advantage that where an outlay takes place upon sewerage works in a country district, one half of the outlay should be charged to the owner?—I should propose that certain works should be done entirely by the owner, but in other cases, where the proposed works are clearly for the benefit of the whole parish, they should be charged upon the highway rates.

6719. What kind of works?—All drains taken direct from cottages should be charged upon the owner, but main sewers should be charged upon the parish if there was such a thing as sewerage necessary.

6720. What do you mean by main drains?—We have got, for instance, a main drain in my own parish which leads down into the marshes, and through the marshes into the sea; that now is not kept up by the parishes, it is kept up by the owners of the land on either side, and of course they very much neglect it, it often gets choked.

6721. If you made a main drain, would you make it from money borrowed to be repaid in a certain number of years, or would you make it out of the rates of the district?—I should make it out of the rates of the parish if sufficient, and if not, by borrowing upon the rates of the parish.

6722. Is it not objectionable, when it is a permanent improvement of that kind, that you should charge it upon the rates of the district which are paid by the occupiers; would not it be better to lay some portion of the expense of a permanent work of that kind partly upon the owners and partly upon the occupiers?—In that case I imagine, if the rates increase, the owners really pay for it, in reducing the rent, in the long run. I know in my own neighbourhood it has been completely the case that where there have been increased poor rates or highway rates in any parish the rent has proportionately gone down, so that the owner really has paid for it.

6723. Would not that get over the disinclination to carry out those works of permanent sanitary improvement? I know that an objection very much arises from the fear of increased rates, but if you throw it partly upon the owners you might find greater willingness to carry out those permanent works?—I think if the owners would come forward and assist in that way it would be a very great advantage, there would not be the same indisposition to carry out sanitary measures.

6724. What would be your next authority to the local board which you suggest? Would you put them in any way under the board of guardians, or would you put them under the county board, or directly under the Home Office?—I proposed in the first instance that if the local board did not meet there should be an appeal made to the magistrates in petty sessions, and upon it being proved satisfactorily to the magistrates that the non-meeting of that board was injurious to the health of a village or of a place, that the magistrates should have the power of fining the members of the board.

6725. Does the medical officer of your district give information of nuisances?—I am sorry to say as a general fact that he has been the great opponent of sanitary measures. I may also mention with respect to another medical man, that his own house and his own yard behind are just the focus of all that is bad; he seems to think that no infection arises from those matters.

6726. With respect to a question asked you by Mr. Powell about windows, you propose that a house should not be inhabited without the windows being made to open, but you could not propose to interfere with a tenant in any compulsory manner with respect to the opening of the windows?—It would be a very difficult thing to do so. At the same time as far as keeping windows closed would affect the general health of the neighbourhood, I think they ought to be called upon to open their windows.

6727. It would be quite possible to say that no house should be inhabited without the windows being made to open, or even without the bed rooms having fireplaces in them, but it would be impossible, would it not, to compel the people to keep them open?—I am afraid it would be impossible to compel them, but I should propose that every window should be made to open, and that there should be a means of admitting the external air from under the windows.

The witness withdrew.

(53.) William Heane, Esq., examined.

W. Heane, Esq.

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6728. (*Chairman.*) You are the medical health officer of East Dean, in the Forest of Dean, are you not?—Yes.

6729. That was an extra parochial district in the Forest of Dean, was it not?—It was.

6730. When was it parochialized?—In 1838, under the title of the township of East Dean.

6731. In 1842 was it not joined to the Westbury-on-Severn union?—Yes.

6732. How is it now governed?—By the board of guardians, and by a local board of health.

6733. How was the Local Government Act adopted, and when?—It was adopted on the petition of the inhabitants in 1866.

6734. Is that district conterminous with the parish or township?—Yes.

6735. What is the area?—12,487 acres.

6736. What is the rateable value?—31,000*l.* The population now is about 11,000, and the number of houses about 2,110.

6737. Is there much increase of houses going on?—A great increase.

6738. What is the rate of mortality?—About 20 to 25 per 1,000.

6739. What are the officers employed by the local authority?—There is an inspector of nuisances and a medical officer of health; these are the only officers employed under the local board. There is also a certifying surgeon under the Factory Act.

6740. How was the officer of health appointed?—By the local board, upon the recommendation of the Board of Health in London.

6741. Under what Act?—Under the Artizans and Labourers Dwellings Act.

6742. What are his duties?—His duties are to inspect the whole of the district of East Dean, to report upon its sanitary state, and to report also upon the water, and as regards what nuisances exist.

6743. What is the difference between his office of inspection and the office of the inspector of nuisances?—I cannot tell; it is a question that I have asked, and I have not been able to ascertain where our duties clash.

6744. What are the salaries of those two officers?—I do not know what the salary of the inspector of nuisances is, but my salary as medical officer is 100*l.* a year.

6745. Do you find in your practice that you are often supervising the work of the inspector of nuisances?—I find that our duties clash together, or rather that we are often engaged upon the same subject without knowing it. There seems to be a want of definition of the duty between the two offices. The medical health officer should be appointed by the Home Secretary and be *ex officio* a member of the local board. His duties should be to assist and advise the board in all sanitary matters, to make periodical inspections of his district, and to report them to the board, and the inspector of nuisances should be placed somewhat under his authority.

6746. Are you appointed by the local authority?—Yes.

6747. And the inspector of nuisances is appointed by the board of guardians, is he not?—I believe the inspector of nuisances is appointed by the local board of health.

6748. Is there also an inspector under the Factories Act visiting the same district?—There is a certifying surgeon and a visiting inspector.

6749. So that in fact there are three officers who are more or less doing the same work?—The factory certifying surgeon merely certifies as to the employment of children under 14 years of age in the iron-works.

6750. Have you any hospital in your district?—None, with the exception of the county hospital at Gloucester.

6751. Do you think that there ought to be a local hospital?—Yes, I think so.

6752. For each parish?—No, not for each parish, but for such a district as ours is.

6753. What sort of population would that include?—It is a large mining population.

6754. Do you think that that population of 11,000 ought to have a hospital to itself?—I think so.

6755. Should it be supported from the rates of the district?—I should think it might be supported from voluntary contributions. I should not put the hospital upon the rates of the district, decidedly not.

6756. How is the hospital supported which is used by your district?—The Gloucester hospital is supported by voluntary contributions.

6757. How is the registration of death carried on in your district?—As far as I know, I believe that nearly all the cases are certified by surgeons resident in the neighbourhood.

6758. Both of death and disease?—Both death and disease.

6759. Have you kept any private register?—I have.

6760. In comparing yours with the public register, do you find much difference?—I have never compared it, with the exception of a return that I got from the registrar of deaths, but I believe that my register is very accurately kept as far as I am concerned.

6761. Have you any suggestion to make for rendering the registration of death and disease more complete than it is?—I should say that all returns of deaths ought to be made by a medical man if possible.

6762. But supposing persons die without any medical attendant, how could a medical man certify the cause of death?—Under those circumstances what is generally done is this: some medical man is sent for; he examines into the case as near as he possibly can, and he certifies as near as he can, but mentioning at the same time that the parties were not attended personally.

6763. Do you think that there are many deaths not registered?—Not in my district; I am quite certain there are not.

6764. Not even of infants?—I do not think even of infants.

6765. Do you believe that there is much infanticide or deaths of infants from neglect?—I fancy that there is very often great neglect of infants under certain circumstances, but I could not go so far as to say that direct infanticide takes place. I have seen children very much neglected, almost amounting to a criminal neglect; but still I would not take upon myself to say that there was decided infanticide.

6766. Is your local board, do you think, efficient for all sanitary purposes?—They ought to be, but I do not think that they are efficient in sanitary matters; they are not active enough.

6767. What control have they over buildings?—As far as I know they exercise no control.

6768. Do you think that they should exercise control?—Yes, I think they should.

6769. Have they the power?—I am not sufficiently acquainted with the Act of Parliament to say that they have the power to control buildings.

6770. By the 34th section of the Local Government Act, 1858, every local board may make byelaws with respect to buildings, their structure and drainage, do you think that your board do not exercise those powers?—I am certain that they have not exercised that authority as yet.

6771. In what state generally are the houses in East Dean with respect to sewage and cleanliness?—In a very bad state.

6772. What sort of system of drainage do they want?—The drainage that is wanted is a regular system of sewerage throughout the district, but the difficulty is in carrying it out.

6773. As to the 2,000 houses that you have mentioned, do they exist in the township collected in streets, or are they scattered?—They are scattered.

6774. And yet you think that one general system of drainage might be applied to them all?—I think they

must ultimately carry out a system of drainage there and sewerage.

6775. Is such a system in contemplation?—It has been discussed.

6776. What is the plan which has been discussed, is it for a general outfall?—A general drainage; I believe the outfall was to have been carried towards the brooks.

6777. That would be distinctly creating a nuisance by common law?—Yes it would.

6778. What is the general nature of the want of cleanliness, is it as to privies?—Yes, as to privies and pigsties; they are in a very bad state.

6779. Are there collections of refuse in various places?—Yes.

6780. Do you believe as medical officer that those collections of refuse are injurious to health?—Yes, very much so.

6781. Can you state that disease occurs in the neighbourhood of such collections?—Yes.

6782. Are those heaps of refuse left sometimes for years?—Yes, for years.

6783. What is your inspector of nuisances doing all the time?—I do not know; I do not think the late inspector did much, the present one (appointed about April last) is very active.

6784. Might there not be a sale for the contents of those heaps, both of the privy refuse and the pigsty refuse, to the farmers in the neighbourhood?—I think that there might; if it was properly prepared there would be a sale for it.

6785. Have you had much fever such as you could attribute to those collections of refuse?—We have a good deal of scarlet fever which is constantly there, in fact, we are very seldom free from it, and sometimes the outbreak is of a very serious character.

6786. Which you attribute to this want of drainage?—Yes, to this want of drainage, and the cesspools and the bad state of the privies and pigsties.

6787. Are the house drains properly trapped?—I do not think they are.

6788. What is the water supply?—From wells and from natural springs.

6789. Is the water drunk by the inhabitants polluted in any cases?—In the wells in some instances I have decidedly found polluted water, but as regards the natural springs, which is the great supply to the place at present, they cannot pollute it, the water in that case is perfectly good.

6790. And is it sufficient?—No, not sufficient; in summer time those springs are nearly all dried up, and in summer time there is a great deficiency of water.

6791. And as there is a great increase of houses going on this deficiency will increase rapidly, will it not?—Yes.

6792. Is there any proposal for a better supply of water?—It has been discussed.

6793. What has been the nature of the plan discussed?—The plan at present proposed is that the supply of water should be carried out by a private company.

6794. Is it to supply the whole neighbourhood?—For the whole neighbourhood. The township is of a very extensive character, but the population is condensed in small bodies here and there in the township. The township consists of half the Royal Forest of Dean. (*The witness produced a map and described it to the Commission.*)

6795. Are the houses themselves crowded in East Dean?—In one particular spot, which they call Little Deanswoodside, they are.

6796. This district of the Forest of Dean is Government property, is it not, which has recently been enclosed?—Yes, within the last 35 years; enclosures have been going on all that time; from about 1825 the Crown has been enclosing certain portions every year.

6797. And now the forest is being opened for both coal and iron mines?—Yes, both coal and iron mines.

6798. Are the houses that you talk of the houses of workmen crowding round those works?—Yes, crowding round those works.

6799. Are those houses not only crowded too much together, but themselves too much crowded by inhabitants?—Yes, in some cases.

6800. Who builds them?—They are generally built by the men themselves, or they have been built by persons on speculation, but generally speaking the miners themselves have built those houses.

6801. Who is the landlord?—The Crown sells the land to those parties for building purposes; the Crown will sell portions of the waste land not within the enclosures at, I think, about the rate of 2*l.* per perch for building purposes.

6802. Do they sell it in fee?—Yes, they grant it in fee.

6803. Are you sure that the Crown parts with the fee?—I think they do; I am not sufficient of a lawyer to know about that. Up to the year 1834 the Crown allowed parties to make encroachments on the waste, and those amounted at that time, in 1834, to 2,108 acres, on which were erected 1,412 houses. The population at that time in the whole of the forest was 7,014; the population at the present time I believe is 20,000. In 1834 the Crown or Parliament abolished all the old original forest laws, and granted to those parties who had encroached the property in fee according to the number of years the encroachments had been in the possession of the parties. There was what they called the red land, of which the freehold was granted if it had been in the possession of the parties for so many years. Then there was the blue land, which had been held for a less number of years, and that was made freehold upon paying some extra fee; and the remainder of the land was made freehold upon paying a little more in addition. I believe that the Government sells the land at 2*l.* a perch, and makes it freehold.

6804. Are those houses all built by the occupiers?—Generally speaking they have been built by the occupants.

6805. What extent of land have those people generally speaking?—Generally speaking they have sufficient land to build a small cottage on and perhaps a small garden attached to it.

6806. Has not the mode in which the Crown has parted with such very small patches of land to persons for the purpose of building houses for themselves been itself the cause of the overcrowding of houses on the land?—Yes; by bringing together a large population; but they are not overcrowded at present, except here and there.

6807. Are those patches of land separate?—Yes, most of them are separate.

6808. What sort of houses are they?—The houses that have been erected lately are really very good houses.

6809. Are any of them built for the purpose of letting?—Yes.

6810. What sort of rents do they carry?—They rent from 4*s.* a week to 7*s.* a week.

6811. In general has one family got a house to itself?—No, not always.

6812. In some places are the houses let to lodgers?—Yes.

6813. And is it in that case that they are generally overcrowded?—Yes, that is where the overcrowding is.

6814. Who are the persons undertaking the mines, are they companies or are they individuals?—Mostly individuals in the forest, but there are two large companies.

6815. Do the individuals who are undertaking mining operations in any case purchase surface land for the workmen?—Not that I am aware of.

6816. As to the workmen, are they generally freeholders?—Yes, generally freeholders.

6817. Is the Crown the lessor of the mines?—Yes.

6818. How far does the Crown contribute to the expenses of the local government?—Nothing at all.

6819. The mines are rated, are they not?—I am not sure about that; the coal mines are rated, but the iron mines I think are not.

6820. Does the main expense of local government fall upon those small workmen with their little houses or patches of freehold?—Yes.

6821. Can you state whether in the deeds of sale from the Crown to those individuals there are any conditions as to drainage or local improvement?—I think none whatever. The information which I have from the clerk of the local board about the Crown doing anything with respect to the roads or helping in local matters is that nothing whatever is done.

6822. How is the local board of health constituted?—I think they are appointed by a meeting of the ratepayers in the ordinary mode. At the time the local board was appointed I was absent, so that I know but very little about it. My connexion with the local board has been only within the last four months.

6823. What is the class of persons which constitute the local board?—Nearly all of them large coal and iron mine proprietors, lessees under the Crown.

6824. (*Earl of Romney*). Do not the lessees of those mines pay rates?—The lessees of the coal mines do.

6825. The coal mines are the principal things in the Forest of Dean, are they not?—Yes, and they are rated very heavily to the poor rate.

6826. (*Chairman.*) Do you know the township of Cinderford which is close to East Dean?—Yes.

6827. We have had evidence from a Government inspector that there is no place in the whole course of his experience in a worse sanitary condition than Cinderford; do you bear out that evidence?—I do.

6828. Is Cinderford governed in the same way as East Dean?—Cinderford is in East Dean. We call it Cinderford, but it is all the same district.

6829. What suggestions do you make for alterations in the local government of East Dean to improve its condition? You have already suggested that there should be a general drainage of the whole township, and that there should be a better water supply; have you any further suggestion to make?—I have no further suggestion than this, that at present I see no prospect of its being carried out. In my report to the local board I have suggested that there should be a very strict inspection of all those nuisances, and that they should be removed, and that the privies should be all altered and the earth system adopted as far as it could possibly be adopted.

6830. Are there adjoining populous districts which you think ought to be annexed to East Dean?—There is a very populous district which has just come into existence, which is called the new town.

6831. In what state are the roads?—The roads are very bad.

6832. In fact, from your evidence it would seem that the local board has not exerted the powers which it has by law, either for regulating the position of buildings, or the drainage, or the water supply, or the roads?—It has not.

6833. Does that defect of action result from the defective constitution of the board, or do you think that the board want to be set in motion by some other power?—I think for one thing that the board has been very sluggish in using what power it has. I think it is invested with plenty of power if it would use it; but then, as regards roads, there has been a great correspondence between the local board of health and the Crown upon the subject of roads, and upon the subject of sewerage. The board only meet once a month; they should meet every fortnight at the least.

6834. What did the Local Government Act Office do in the way of trying to set your local board in motion when they sent down their inspector, Mr. Arnold Taylor?—I think that after Mr. Arnold Taylor was sent down to report to the Government, the consequence was that I received the appointment as medical officer.

6835. Has that been the only result of Mr. Arnold Taylor's visit?—I believe that has been the only result. I do not think there has been anything done since, with the exception that I was requested to report thoroughly upon the state of the district.

6836. What led to the Local Government Act Office sending Mr. Taylor down?—A complaint was made from the Westbury guardians.

6837. How do you think that this local board could be set in motion?—I think it wants reconstituting by introducing more working men into the board, such as tradesmen in the neighbourhood and the better class of ratepayers, men of intelligence and men of business. I consider that the local board at present are very good men of business as far as they themselves are concerned, but they have not the time to devote to the matter which they ought to do.

6838. Would you alter the mode of election?—I am not prepared to give an opinion upon that point.

6839. Is it your opinion that the board consists of of much too high a class of men who are not affected by the defective government?—Yes, they are not affected at all by it.

6840. And you think that the small freeholders, if by any means they could be got upon the board, would practically look after their own interests?—Yes, some of the better class of tradesmen would. We have got some very intelligent men there who are not so high a class as those mine proprietors are, and they would go more into the working of the thing.

6841. Are the tradesmen that you refer to in general freeholders themselves?—Yes; I think that the board would be better if it had more of that sort of blood in it, a mixture of the working and the trading community. I think that there are very good men upon the board now, but I think from their position they do not take quite that interest in the matter that the others would.

6842. Do you think that those little freeholders are an intelligent class of men, who would look after their own concerns?—Yes, some of them very much so; some of them hold high positions in the works as clerks and engineers and persons of that character. They are men of very good intelligence, and perfectly capable of conducting the management of local sanitary measures.

6843. The result of the inspection on the part of the Local Government Act Office having only been your appointment, may we suppose that further results will take place?—I hope so.

6844. Amongst those further results are those plans of sewage and water supply which you say are under discussion?—They are under discussion, but I have no hope of seeing them carried out; not as regards the sewage and the water question certainly, the expense will be too great as I have understood.

6845. Do you think that the Local Government Act Office ought to have more power to set your local board in motion?—I think if they were acting under some central authority it would be better.

6846. Have you thought whether some authority between the London authority and you might set you better in motion, as for instance the quarter sessions?—I am doubtful upon that point. I think myself that a travelling inspector from the central authority in London, to see that the country local boards carried out the Act properly and efficiently, would be a very great thing.

6847. You have told us that the rateable value of East Dean is 31,000*l.*; can you tell us what the rates have ever amounted to in the pound in a year?—I cannot. There has been one rate made by this local board at 2*d.* in the pound. I do not know about the rates as regards the parochial rates for the relief of the poor, but I believe that there are about four poor rates in the year at 1*s.* in the pound each.

6848. What other rates besides are there?—There are no other rates besides; no highway rates.

6849. Then your rating is not very heavy at present?—No, it is not very heavy at present.

6850. Are you afraid that the works which you consider necessary to place East Dean in a proper

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condition would be expensive?—I think very much so.

6851. Have you had any estimate of the cost?—I understand that there was an estimate given in as regards the drainage, which was estimated to cost 3,000*l.*, and there is an estimate for forming two roads, which are very much required, of about 1,000*l*,

6852. Such sums as these, even if raised by loan would not form a very heavy burthen upon the rateable value?—No; I think if it could be raised upon loan spread over a certain number of years that the country would be so much benefited by it that it would be felt to be little or no burthen at all.

6853. (*Mr. Hibbert.*) When you say that you sent your report in about a month ago, was it sent to the Home Office?—Yes.

6854. Has anything been done since that report was sent in?—I have heard of nothing.

6855. I suppose that the receipt of the report has been acknowledged?—I believe it has. I have had no acknowledgement myself of it. I sent it to the clerk of the local board, who forwarded it to the Home Office. I sent a report in to the local board, and one to the Home Office, but I sent them both to the clerk, and he forwarded mine to the Home Office, and he told me yesterday that it was sent directly I sent it in.

6856. Are you aware whether any communication has passed between the local board and the Home Office since that report was sent?—I am not aware of any.

6857. (*Mr. Powell.*) Does the Crown do anything in the way of laying out and paving roads?—Nothing at all.

6858. Do you mean that when they laid out property for building there was no arrangement made with regard to the roads, and no drainage done?—No, I think none at all.

6859. Where do the great proprietors of the mines reside, do they live near East Dean?—Yes.

6860. Within what distance?—Within a distance of four miles, and some of them closer.

6861. Are the meetings of the board held in the daytime or the evening?—In the daytime.

6862. Then there is no reason as regards the distance that they come, or the inconvenience of the time of meeting why they should not attend?—None whatever.

6863. How many members are there on the board?—Nine were originally elected; the board consists of eight members at present, one being dead.

6864. Are there contested elections, or do they take place without a contest?—They were elected, I believe, at what we call a parish meeting. I do not think there has been any election since the board was first formed in 1866.

6865. You recommended certain local hospitals, how would you have the patients maintained in them?—I should maintain the hospital by local contributions, and from what I know of the country I fancy a sufficient fund might be raised there to support a small hospital. I am one of the medical officers, and there is a very good supply of medical men in the neighbourhood. It is more on account of the injuries that are received in the pits that we want a hospital; we meet with some fearful accidents, and it is a long distance to send a man to Gloucester, if it is necessary, but we very seldom send them.

6866. You are not speaking of a hospital maintained by rates, but by voluntary contributions?—Yes, a hospital for the treatment of injuries. There is no want of anything like a medical hospital there, for the parties are well provided with medical assistance. In a small district there are three medical men, and I can speak positively for all of them that they are men of good standing and good character, and they do their duty properly, but the parties who are placed under them are most of them men belonging to the works, and every work employs a surgeon.

6867. Do you think it would be proper to make policemen inspectors of nuisances?—I think it would be very unpopular.

6868. Do you think that their interference would be resisted?—Yes, I think so. Although I think you ought to compel people to be clean, and you will not succeed in doing that unless you compel them to adopt sanitary measures, still I should not like to see a policeman invested with that power; I think it would be very offensive.

6869. Has the Crown any resident agent at East Dean?—There are several resident agents under the Crown, but the chief is Sir James Campbell.

6870. Where does he reside?—At Whitemead Park, in the middle of the parish.

6871. (*Earl Romney*). You stated, did you not, that it was proposed to make a drain down to the brook?—Yes.

6872. Are you afraid that that would be very expensive?—Very expensive I have understood.

6873. Would not it be cheaper, particularly in a coal district, to have the system of privies and application of the dust from the coal for the purpose of fixing the smell?—In my report I have drawn out a plan of privy which I recommended the local board to adopt till they can adopt drainage (the present privies could be altered with very little expense) with a trap behind it on purpose to throw dust or coal dust in, or common mould, a shovelful every morning, and which I think would answer their purpose for the present.

6874. And save a great deal of expense?—Yes, and save an enormous expense.

The witness withdrew.

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(54.) Lord Egerton of Tatton, examined.

6875. (*Chairman.*) I presume that your lordship must by reason of property have considerable knowledge of local government, both in town districts and also in rural districts, and also, what is more difficult, rural districts which are in process of becoming building districts?—I have been for many years connected with the management of property, both in several large towns in Lancashire and likewise in the rural districts adjoining which by degrees have been covered with villa houses and houses of other descriptions also. As an ex officio guardian, I have had some experience in the way of acting upon boards of guardians, who are in many cases the sanitary authorities of their respective districts.

6876. Should you say that whilst large towns, such as those in Lancashire, have had very efficient local governments through their town councils, the boards of guardians have not been equally good or efficient local authorities for the rural districts?—I think in almost all cases where there are large municipal corporations, like those of Manchester and Salford, and others, in both which cases, certainly in the case of Manchester, with which I am more immediately connected, the town clerk is a most experienced and active person, and likewise the town surveyor, all sanitary regulations are both efficiently conceived and well carried out. The great difficulties, I think, exist in districts which are by degrees becoming covered over with houses in the neighbourhood of those large towns, where in many cases there are either local boards of health or no superintendence of any kind or sort, and where it does not belong to one proprietor who can have some degree of management over the sewerage and other sanitary regulations. In the cases of purely rural districts it is very varied. In some places the local boards and the guardians will exercise a very proper jurisdiction and look very much after sanitary arrangements, but in others they are perfectly neglected. Everything depends upon the acting guardians in the respective places.

6877. Are the Commission to understand it to be your opinion that where rural districts are becoming building

districts, the so-called local authorities are hardly equal to the larger responsibilities which they so incur ?—I think that for various reasons and their want of knowledge on the subject, they are not the parties who should either originate or carry out sanitary regulations. In many cases they have their own little private predilections and are anxious to carry out perhaps improvements and sanitary regulations in particular places, and what I think you require is that in all cases of that description, where you have local authorities, some power of appeal should exist in London, either to the Privy Council Office or to the Home Office, whereby those who may consider themselves injured by the regulations which the local authorities make, may have some means of having redress afforded them. I speak perhaps in this respect from having property in the neighbourhood of Manchester, which I have taken some pains with in making sewers, roads, and everything of the kind myself, but I know that in places where I have detached bits of property I have often been put to considerable expenses for no earthly reason that I can discover except the will and pleasure of the local board of health.

6878. Is this opinion chiefly connected with large works, and not with respect to the ordinary cleansing and nuisance removal operations in a district ?—It generally arises in this way. Brooks run through a district, and the general course, when small freehold properties are covered with cottages, is that the cottages are drained into a ditch, and the ditch drains, to some degree, into a brook, and then those whose property happens to be below are called upon to remove the sewerage and everything of the kind which may come into it, I may say, by the laches of those who live above. They have no means of preventing them, and the consequence is that the neighbouring owners are put to considerable expense and inconvenience, by those nuisances being thrown upon them by the small cottage proprietors. Wherever the property is in the hands of a considerable landowner, proper sewers are made, and all the necessary regulations are laid down for that purpose, and the sewage is carried off properly ; but I have several times been put to considerable expense, and been called upon to cover over brooks which have become nothing more nor less than common sewers in consequence of the sewage above being thrown into them.

6879. This has probably arisen from the local authority not being adequate to deal with the works on a sufficient scale ?—The difficulty is this : round Manchester there are a great number of townships and districts ; local boards of health are appointed for them, and their authority does not extend beyond their own district, consequently in many cases they are satisfied with throwing their sewage upon those who come below them, and in that way getting rid of their own responsibility.

6880. Why do you propose remedying this defect by an appeal rather than by a reconstruction of the defective authority ?—It is a very difficult thing in a large district to constitute what you call a good local board ; and even supposing that could be effected over a large district, I always think that there ought to be some court of appeal, which may redress any grievances which may take place. We all know perfectly well that, even in the cases of municipal corporations, and in fact all large bodies, they will do things as a corporation which individually they would never think of doing. They may put persons to enormous expense and inconvenience, perhaps without thinking of it, and in the case of persons whose means are small they have no possible remedy against that sort of thing.

6881. Do you think that in such districts as you are describing it would be difficult to constitute a good local authority ?—I think that great difficulties would exist in constituting the district itself. We all know that in cases of municipal corporations themselves, great objection is constantly entertained by an outlying or adjoining district to their being placed under municipal authority, and those adjoining districts probably would be the ones which ought to form one united district. I am only stating this to show you the difficulties which would arise in forming a large district for those purposes, that even at the present moment, when districts are proposed to be brought under a municipal corporation very great objection is often raised because there is no appeal.

6882. To whom do you think that appeal should be made ?—I think that the appeal ought to be made to some authority in London. At the present moment I believe it is a divided authority, namely, the Home Office and the Privy Council Office. I think that there ought to be some authority of a sanitary nature, both a medical man and a good surveyor, and that either the Privy Council or the Home Office should have the power, at the expense of the parties who appeal, to send down persons to investigate where an appeal takes place. That would be, I think, a satisfactory means, and would be far better than appealing to any authority on the spot, whose dictum may very often be questioned.

6883. Do you think that those appeals should both be in the nature of asking the central authority to set the local authority in motion for certain works, and also an appeal against grievances inflicted upon individuals by the local authority in conducting their work ?—I think it should be in the latter case an appeal against the local authority, because in many cases the local authority perhaps are almost too ready to act.

6884. Do you say that generally, because the Commission have found in the evidence given before them very much reluctance on the part of local authorities to undertake expensive works ?—I do not think that is the case with municipal corporations. In the case of local authorities there is no doubt that that would be the case, because their area is small and the expense comes more directly upon them.

6885. But the appeal that you are now contemplating is rather an appeal against grievances inflicted by the local authorities in the neighbourhood ?—Yes.

6886. And that you think should be to the Local Government Office combined with the Privy Council ?—Yes, I speak of it in this way : a proprietor may be called upon to cover over, perhaps for several hundred yards, an immense brook course. The grievances complained of may not arise from anything which he has done, or which has been done upon his property ; and it may be hard upon him from the mere fact of a brook course going through his property, that he should be called upon to be put to a considerable expense for the benefit of others ; and therefore in a case of that kind I think, the appeal should be to the central authority, either to lay the burden upon the whole district, or to give such remedy as they may consider proper and necessary.

6887. That would be in fact to give an easier remedy to an injured individual than he could get through a court of law ?—There is no doubt of it. The difficulty that you labour under now in a work of this description is this, that unless the proprietor does the whole work himself, and carries it out upon his own property, when the sewer comes through smaller properties, the proprietors may be very much aggrieved, and yet have no power of appeal at all against the local board for anything that they may do. In the case of large proprietors, either through Parliament or through the courts of law, they may obtain an injunction or they may obtain some remedy for the damage which is inflicted upon them, but in the case of a small proprietor it is impossible for him to do so.

6888. Do you think that the difficulty in forming better local authorities in such districts as you have alluded to, arises a good deal from the district being in what I may call a transitional state, being neither town nor country ?—No doubt.

6889. And when such districts finally become absolute towns more municipal organization would be constituted ?—There is no doubt of it ; and they get good officers, and those officers carry on the work properly ; whereas with small local boards they cannot afford to have proper local officers, and the

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whole thing falls into the hands of some two or three probably interested persons, who do not know how to carry it out.

6890. Have you no suggestion to make to improve that state of things, either by amending the process of election or the qualification for members for such a board?—No, I do not know that I have.

6891. Could you tell us what class of persons practically get upon such boards?—Generally tradesmen and persons who take villas in the neighbourhood of Manchester; tradesmen, small manufacturers, and persons of that description, whose time is fully occupied in the towns in business, and who have but little time to attend to those matters.

6892. In proposing an appeal from such boards to the central office we have had a suggestion from several quarters of an intermediate board between the local board and the London board, which it has been suggested might possibly be the county financial boards, if ever they are constituted, as they are now proposed by a bill before Parliament, or the quarter sessions, in some way as an intermediate authority between the local board and the London board, would such a plan appear to you to be a good one?—I think that it would multiply the expense. The great object is to avoid expense in these matters, and if you had the power of appeal, and a person sent down from London, you would merely have to pay that man's expenses down, whereas if you appeal to the quarter sessions probably the same machinery must be put in operation, and you might have persons sent down who would not have probably so extended an experience as a London man.

6893. Do you not think there is anything in the quarter sessions that would make it a better board to deal with a locality than a London official?—Certainly not in the case of large towns. In quarter sessions near towns, for instance like Manchester, there are a very large number of magistrates, and with the greatest respect to them, for I am a magistrate myself, I should be very sorry to be called upon to decide in matters of this description without professional advice. I may say perhaps that Mr. Rawlinson, during the time of the Lancashire cotton distress, had to carry out a great number of large sanitary works in those towns. He was thoroughly acquainted with the whole matter, and was able to give very good and advantageous advice to the parties who were carrying out those works, and a man of that description is a man whose advice I should wish to have, and who would be perfectly qualified from his antecedents to judge fairly between the two parties.

6894. I understand you, from your first answers, that the local authorities in those transitional districts act badly, but do the local authorities in purely rural districts fail in not acting at all?—I think that their action is a very uncertain one. In some cases, where you find an active guardian, measures will be taken for remedying nuisances, whereas in others no attention at all will be paid to the matter, unless an active stirring person comes in.

6895. You are probably aware that the Sanitary Acts, which are now accumulating to something like the number of twenty, impose some functions in rural districts upon the vestry, and some upon the boards of guardians. Which do you think is the best of those two bodies for the local government of rural districts?—The board of guardians I should say certainly. We have no such things in our county as what they term vestries in the rural districts. The whole thing is carried on by the boards of guardians. We have nothing to do with vestries.

6896. Do you think that the boards of guardians might be made efficient local authorities for the local government of rural districts, both for removing nuisances and cleansing, and also supplying water and drainage, and similar purposes?—Not without a power of appeal. I do not see how it is possible for them to carry it out with a divided authority. A township ceases in a particular place, and if you were to carry out drainage in a country like ours that drainage must extend probably over some two or three miles.

6897. But in the case of works which extended over more than one such area, might not the areas combine for those larger works?—They would not practically do so.

6898. Even although there were a power in the central government to set them in motion?—The difficulty will always be the rating. A town requires its sewage to be carried out; that sewage will probably have to be carried away some three or four miles into a river, or into a tributary, or into the fields. You could not rate the townships through which it passes, nor in many cases could you obtain authority to carry it through. At the present moment I know in my own case the board of guardians are anxious to diminish a nuisance of this description, but the owners of the properties through which this sewerage is proposed to be carried object to its being carried through, and they say that it will damage their property.

6899. In considering the amendments of the existing law it might be rather a suggestion for improvement of the law, might it not, to give such power?—You never will persuade ratepayers to contribute money for what does not come home in that way to their doors, that would be the difficulty; and it is the difficulty at the present moment in the practical working of the poor law. If a new workhouse is to be built or any new work to be executed there is an universal outcry against it.

6900. We have had one suggestion that the highway boards might be a better local authority than the board of guardians, what do you think of that suggestion? the idea being that the highway boards are more coincident with the petty sessional divisions, and, in fact, so much so that the officers of the petty sessions might be used for that purpose?—Perhaps, as a practical proof that that will hardly answer, I may mention that one or two of our principal towns in the middle of our highway board have local government Acts of their own, and they are parties who want to get rid of their sewage; and you never will persuade the highway board to go to any expense in carrying out the sewage of towns through the adjoining districts. The moment a local board is formed, they will be *ipso facto* emancipated from the highway board, and in many cases they are anxious to do it, and therefore it would be impossible to get the two bodies to act together. You must give a fresh authority to the highway board.

6901. We have had some suggestions also that a much larger area might be adopted, and that the rivers conservancy boards taking the whole watershed of a river might not only undertake the care of that river, both for the purpose of freeing it from pollution and also for the purpose of draining agricultural land into it, but also undertake the local government of the whole of that area, does that suggestion appear to you to be a good one?—If I take the local area of the Mersey and the Irwell, tracing them up into the respective counties of Lancashire, Cheshire, Yorkshire, and parts of Derbyshire, a local board composed of representatives from those districts would be too large.

6902. The suggestion is that, whereas those boards would be formed for the rivers conservancy, they might be made use of for general local government, although possibly the larger area might be cut up into smaller areas as the unit of government?—I do not see how that practically could be carried out. You must have the rivers connected with them and falling into them for miles and miles round. The area I should say of the Mersey and Irwell would be nearly 60 miles square.

6903. Mr. Rawlinson's plan was that each tributary should have a board, and that the whole river basin should have an aggregate board, and that those smaller boards connected with each tributary should be the limit of local government?—It may sound well in

theory, but I doubt its being able to be carried out practically.

6904. Do you think in fact that we must keep to the parish as the unit of government?—You must either keep to the parish as the unit of government or take in large districts. A parish in our county means a township, a parish is an ecclesiastical district. A township is a local district having its own individual officers.

6905. Are you at all afraid of those local authorities exercising their powers so as to create an undue expenditure of the local rates?—That may happen where a man may wish for his own purpose or to benefit his own property to get a place drained or sewered.

6906. Do you think that local rating generally in the kingdom is becoming unduly burthensome?—It is becoming very heavy.

6907. Do you think that by a simplification of the law and of the authorities we might economize that expenditure?—I doubt very much the economy.

6908. Are you rather afraid that we may increase it?—Yes, my belief is that in extending your area, certainly for poor law purposes, the tendency is rather to increase the expenditure, and to offer no encouragement to the different persons representing the different townships to keep their poor off the rates.

6909. In the case of officers, such as medical officers and inspectors of nuisances, would not the enlargement of the area lead to fewer and better men being employed?—No, for I think at the present moment our poor law unions are already, in Cheshire, almost on too large a scale, and they were originally made too extensive; in most cases we have had in each union four or five different medical officers, the mistake was committed in the formation of the unions.

6910. Are the medical officers pretty well paid?—They could not afford to do it unless they had other practice; they are enabled to visit the poor law cases, and to do it at a cheap rate, in consequence of having a large medical practice, and they combine the two together; that is information which I received from a medical officer.

6911. Do you think that the inspectors of nuisances generally are sufficiently well paid to do their work efficiently?—In the unions near me generally the inspector of nuisances is the relieving officer, and in one or two cases I think he has been a police officer.

6912. Which of those two do you think the best?—I should say the relieving officer; he has the most opportunities of seeing where nuisances arise, and he is as independent as anyone.

6913. Is he independent of the guardians of the union who pay him, and is he likely to report nuisances upon their premises?—He is in the employ of the board, which is composed of the representatives of a large district, so that supposing he should complain of any individual nuisance in any particular district he would have the support of all the other guardians. The police officers are liable to be removed, and therefore in that respect I think they are not so efficient.

6914. Have you any suggestion to make as to the apportionment of rates in the cost of public works according to the benefit received?—I am considering the subject myself, but I have not arrived at any definite conclusion.

6915. Have you any further suggestions to make to the Commission to remedy the defects of the present law in the matter both of complication and want of simplicity?—I think the great object is to have a good and inexpensive court of appeal, that will remedy a great deal. All those things work out a great deal by themselves, but if you had an appeal, then any grievance that came before it could be remedied, and it is a great thing for the small proprietors to feel that they have a ready and cheap court of appeal.

6916. (*Lord Robert Montagu.*) Will you have the goodness to explain to me the difficulty which stands in the way of practically establishing a representative board for a whole watershed?—Watersheds extend to such immense districts in Lancashire, and the interests would be so conflicting, that I doubt very much your being able practically to carry it into effect.

6917. On the other hand has not a river conservancy board or a watershed board been established for the Thames, the area of which is nearly 4,000 square miles?—The difficulty that I find is with regard to the tributaries. The Mersey, for instance, does not stand alone, but it extends its branches in all directions, in fact it takes in the whole of the parliamentary division of South-east Lancashire.

6918. Do not you think that by means of representation we might form a board where every interest would be heard, and yet the board would not be too numerous?—I think not; all the interests are different. It is like salmon fishing, the upper portion of the river where the breeding takes place and the lower portion where the fish are killed.

6919. Do you not think that they could be assimulated in one board?—I think not; not in a workable board.

6920. Do you mean that it would be too large to be workable?—It would be too large in the first place, and the contending interests would be too great, of the persons who would have manufactories or chemical works on the one side, and bleachers on the other, and people who want to put cinders into the river in another, and in fact so many different interests that I doubt very much your being able to carry it out.

6921. Could you suggest the sort of authority which should secure the purity of a river for all parties along its whole length, and which should also so govern the arterial drainage that banks below in the river should not dam up the river above, and that the details might be carried out so as to drain the land without causing floods?—I do not see my way to that at all; in that county at least.

6922. (*Mr. Powell.*) Should you not consider it a great advantage if a future statute were to put the law relating to sanitary matters in such a state that there might be a great diminution of legislation by private bills?—I think it would be a great advantage if the same process were adopted with respect to sanitary matters as has been adopted with respect to railway, gas, water, and other bills, namely that there should be a model bill on which they should all be framed, and except under peculiar circumstances not departed from.

6923. In the case of a public bill a discussion takes place in the Houses of Parliament without expense, the different members taking part in the discussion, but in the case of a private bill a party cannot oppose except at expense, does not that appear to be a strong reason why private legislation on such matters should fall considerably into abeyance?—I quite agree with you in that respect, that the fewer private bills you have the better. My object would be in all those cases to enable sanitary regulations to be carried out as little expensively as possible, and with the power of appeal as little expensive as possible.

6924. I understand you to express an opinion that a policeman would not act satisfactorily in the district with which you are acquainted as an inspector of nuisances?—The great difficulty with respect to the police is that they are liable to be constantly changed.

6925. But do you think there would be any objection from resistance on the part of the population to visits from the police?—No, I do not think much of that.

6926. Neither in towns nor in rural districts?—I speak with respect to the country. I would rather not speak with respect to towns.

His lordship withdrew.

Mr. J. B. Soper.

5 July 1869.

(55.) Mr. JOHN B. SOPER examined.

6927. (*Chairman.*) Do you live in Basingstoke?—Yes.

6928. What is your profession?—An engineer and ironmonger.

6929. What is the population of Basingstoke?—In 1861, at the last census, it was 4,640.

6930. What is the nature of the population chiefly?—The poorer class are agricultural; the others are mechanics and tradespeople.

6931. Do you know the acreage?—The acreage is over 4,000.

6932. What is the rateable value?—The rateable value at the present time is 20,735*l.* The number of houses in 1861 was 900, and about 250 houses have been built since.

6933. How is the town governed?—By a corporation and a paving commission.

6934. Have they adopted the Local Government Act?—No.

6935. The town council is the governing body, I presume?—Yes.

6936. How do they carry out the sanitary matters of the town?—Very badly.

6937. What is your water supply?—We have none but wells.

6938. And are they insufficient?—They are sufficient for the supply of the houses where they are dug, but in case of fire very inadequate, and there are a great number of houses without wells at all.

6939. Is the water pure?—In some cases it is, and in some cases it is very bad.

6940. In what way is the water bad?—In the low part of the town the soakage of the sewage gets into the wells.

6941. Have you any system of drainage?—A partial system; a part of the town is not drained at all.

6942. In the part that is drained what is the plan?—It is merely a sub-drain but a very little way underground. It does not drain any cellars or the basements of the houses.

6943. What is the outfall?—There are two outfalls, the one on the west of the town is into the stream of the river Lodden, and the one on the east of the town is into the canal or barge river.

6944. The drainage into the river is a nuisance, is it not?—Yes, and very often intolerable.

6945. Have you never been threatened with proceedings?—No, there has been no threatening, I believe; we have had several investigations, one by Mr. Ranger who came down in 1853 and surveyed the whole town.

6946. From whom was he sent?—By petition from the ratepayers; he was sent down by the General Board of Health.

6947. What was the result?—Here is the report from him (*producing the same*) of the whole state of the town, which he describes to be in a very bad state.

6948. Does he recommend any improvement?—Yes, he recommended that waterworks should be established and a system of drainage carried out.

6949. Were his recommendations carried out?—No.

6950. Why were they not?—Because of the expense and a disagreement between the two boards as to who should carry it out, whether it should be by the corporation or by the paving commissioners. The paving commissioners have no power to raise money only to a certain amount, which I believe is but 1*s.* 6*d.* in the pound on one description of property, and 9*d.* on the other.

6951. Is that under their Act?—Yes.

6952. Can you tell us whether by the existing Acts the town council is not the local authority?—I myself believe that they are the local authority for all purposes, but I do not know whether I could justify that opinion in a legal point of view.

6953. (*Mr. Powell.*) The Local Government Act and the Public Health Act not being adopted, and the state of the town being such as has been set forth in the report which you have mentioned, how did it happen that the powers of those general Acts have not been sought, and that the Acts have not been adopted?—Simply from fear of the expense that there would be attending on them. Whenever we have had a public meeting we have been out-voted by the cottage ratepayers. The same thing was brought before the corporation in 1865, and it was there out-voted by one vote, nine voting for and five against, the Act requiring two thirds.

6954. Can you describe the state of your river, beginning at the head of it above the town, and passing downwards along the stream?—It rises in a lane called Bramleys, upon the property of the Rev. Mr. Fraser; that is on the south-west side of the town, where it is a pure spring rising out of the chalk and gravel, and one of the purest waters that we have in the town. It then traverses about 10 chains in length till it crosses the Salisbury Road, and there the houses of the town begin; but, before it comes on to the houses, the main sewer we have in the town empties into it.

6955. That stream goes down through the town and receives all its sewage?—Yes; but at that spot it receives the whole glut of the upper part of the town; all the sewage of the western part of the town is here emptied into it. Then it traverses through the lower part of the town and passes away, becoming increasingly foul.

6956. In the lower part of its course it becomes extremely foul, and is the source of noxious emanations and very offensive smells?—Yes, it becomes very disagreeable indeed.

6957. Is any portion of the stream after it has received the sewage used for drinking purposes?—All along the bottom of the town the cottagers draw their water from it.

6958. Have they the power of drawing merely, or is it actually used for the purpose?—It is actually used; there are dipping places and there are pumps attached to them.

6959. Are there two streams in the town?—Yes, that river and the canal.

6960. In what condition is the canal?—That is worse than the river; the canal is almost stagnant water.

6961. How does the canal receive its water?—It receives its water partially from the drainage of the town and part from springs; the east part of the town has also a sewer, and that is emptied into the canal arm close at the side of the street.

6962. Surely the sewage is not turned into the canal to supply the volume of the canal?—Yes, partially; that was adopted some few years ago when they were short of water.

6963. (*Earl of Romney.*) Do not they take water out of the river into the canal?—No, that is a stream of itself. They run side by side for several miles, and the river goes into the property of Lord Bolton directly it leaves the town.

6964. (*Mr. Powell.*) Do you mean that the sewage is poured into the canal for the sake of the water in the sewage, or simply that the canal is found a convenient mode of disposing of the sewage?—It was done for both purposes, but principally the canal company allow them to empty it into the canal on account of the shortness of water.

6965. Are there cesspools in the town?—A great number.

6966. Have you any notion of the number of them?—I should think about 500.

6967. How often are they emptied?—Sometimes every year, and sometimes once in three years, according to the depth of them. Some are sunk to a very great depth; some of them, I know, are sunk right down to the water-bearing strata.

6968. Are there privies and ash-pits to the houses?—A great number.

6969. How often are they cleaned out?—When full, not before.

6970. Do they drain into those cesspools?—Yes;

the cesspools are sometimes allowed to run over and run into the sewer, and then run into the canal.

6971. You have said that water for drinking purposes is taken from this river, and also that there are wells; are the wells pure?—The wells in the high part of the town are very pure, because they are deep in the chalk.

6972. Are there any cases of wells near cesspools?—Yes; in my own house, in a circle of 50 feet, I have 14 cesspools round my well, and some of those cesspools 10 or 12 feet deep.

6973. Is the water good in your well?—I believe it is, because it is a great depth of chalk. I am 45 feet to water.

6974. Is there any cesspool near your well?—There are three within 11 feet.

6975. And yet you believe that the water is pure?—I have not found any taste from it.

6976. Is your well sufficiently secured by walling?—It is steyned down to a certain depth till we come to the solid chalk; but I am always afraid lest it should get foul.

6977. When the sewage matter is removed from the cesspools and from the privies, by whom is that removal made?—By the landlord.

6978. Do the local authority of the place take no steps whatever in that matter?—No, they do nothing to remedy the evil. On August 7th, 1866 eight medical men were employed by the corporation, to examine the sanitary state of the town. They divided the town into four sections, and two doctors to each section, and four reports were sent in and a meeting held on August 21st to receive the reports, and such was the state of the town found to be that it was decided to be opposed to the interests of the town to print the same, although a committee was elected for that purpose, and this report cost the town 80 guineas, and has not been seen or acted upon since to any extent.

6979. Can you give us any information as to the property of the corporation?—The property brings them in an income of 2,500*l.* a year, that is within the mark, and that money is partly devoted to paying off the interest of the debt.

6980. Do you know what balance remains disposable after paying off the interest of that debt?—There is no balance ever remaining; we generally find ourselves in debt to our bankers at the end of the year.

6981. How much money has been borrowed upon the security of that property?—10,000*l.* to 12,000*l.*

6982. From the disposable balance are the police and fire brigade paid?—Yes, and other charges.

6983. Are there any other matters paid for out of the balance?—There is a life insured to pay off part of the corporation debt, and that has been paid with it ever since 1834.

6984. Was that a debt which was incurred for public works, the town hall being an important part of them?—Yes, for enlarging the market square and rebuilding the town hall, and the street improvements and approaches to it.

6985. Having given this description of the water supply and the sewage arrangements, will you state the result of that condition of affairs upon the mortality of the town?—At different seasons it is very bad indeed. We are now suffering from it, and whenever the wind sets eastward we are suffering from low fevers, and now we are suffering from scarlet fever.

6986. Do many fatal cases of scarlet fever ever happen?—There have been three cases within this week.

6987. Do you find that fever clings to certain localities?—It always begins in the lower part of the town first. I have never known it so high up in the town so severe as it is now.

6988. Does it spread some distance from the canal and from the stream?—Yes, it is now in the market square and Church Street.

6989. Does it take its origin near those waters?—Always near the water, and in Chapel Street and the lower part of the town.

6990. Have you heard of any cases of cholera?—I have never heard of but one case there. I believe cholera is not easily propagated upon a chalk soil.

6991. You say that nothing has been done to remedy those evils; is anything in contemplation?—We have had it in contemplation three or four times; we have had three or four public meetings over this matter, but we could never get the report carried out.

6992. Do you think that the prospect of accomplishing any good result is as distant as ever?—Quite as distant as ever.

6993. When you say we have met, whom do you mean?—The town council and the public bodies and the paving commissioners.

6994. Have there been any meeting of the inhabitants?—Yes.

6995. Of inhabitants as inhabitants, or of inhabitants in their capacity as ratepayers?—As ratepayers. I have with me a list of 168 and their signatures (*producing the same*).

6996. (*Chairman.*) Why is it that the local authority still stop anything being done?—I believe the whole stoppage is from the fear of expense and the want of a well devised plan of utilization.

6997. (*Mr. Bircham.*) Has there been any effort at those meetings to apply the Local Government Act?—Yes, that was what the meetings were called for.

6998. And that has been persistently negatived, has it?—Yes, we have always been swamped at the meetings by the cottage proprietors, whipping up their tenants by saying they would be doubly rated; we always have been met with that plea.

6999. Has any remedial action from outside pressure upon you occurred to your mind?—To my mind I think there should be a pressure from without. We are living so much one among another that each one is afraid to take action for fear of stepping upon his neighbour's toe.

7000. But you have nothing to suggest as to any alteration of the law which would bring a wholesome pressure from a central authority or otherwise upon you?—I have myself an opinion that there should be a direct central authority in London for all public health measures, and the authority should go from there to the local authorities.

7001. Do you mean that they should compel them to execute works?—They should compel them to keep the public health right so far as preventable diseases are concerned.

7002. How would you propose to put this central authority in action?—From the Secretary of State or a board established in London; there should be itinerant visitors to each town or district, similar to school inspectors. I think that would be the easiest way and the most direct.

7003. I presume you mean that they should call upon you locally to do your duty either in the execution of works, or in desisting from the practice of fouling your water, and so on?—Yes, I believe that would be the best way.

7004. And to put you under a penalty if you did not comply with it?—Yes, because the intelligent part of the town no doubt is most desirous to cleanse their property.

7005. Is the property in Basingstoke mainly in the hands of small proprietors?—Yes; and directly there is action taken to cleanse the town they meet together and whip up the ratepayers; of course a cottage ratepayer's vote is equal to that of the largest proprietor, and tells the same.

7006. Has no one sought to put the law in motion for preventing nuisances by letting obnoxious matter into the Lodden?—We have done so by a meeting of the corporate body, nothing more.

7007. But there has been no litigation?—No litigation at all.

7008. Have you been at the Home Office, or complained of it to anybody?—Not since we went to the old General Board of Health in 1853, and reported the state of the town, when they sent down Mr. Ranger, and he made an excellent report of the state of the town.

Mr. J. B. Soper.
15 July 1869.

7009. (*Mr. Powell.*) Are you heavily rated at present?—No, we are not very heavily rated. 1*s.* in the pound will produce 1,035*l.* We are generally rated about four 6*d.* rates, or sometimes five for the poor rate simply.

7010. (*Mr. Bircham.*) Is Basingstoke in a union?—Yes, it is called the Basingstoke union.

7011. (*Mr. Powell.*) Do not the commissioners impose a rate?—Only for general purposes, for the county rate.

7012. What is the total amount of your rate?—About 3*s.* 6*d.* in the pound, the total amount for highway rates, paving rates, and all.

7013. (*Mr. Bircham.*) If I understand you, the income of the corporation pays the interest upon and part of the principal of the debt which you incurred for public purposes, and the paving commissioners levy nothing for their purposes?—They, the paving commissioners, are allowed to levy a 9*d.* rate, or, taking all the rates together, it would be about a 9*d.* rate; that is all they are ever allowed to levy, and they do that every year.

7014. What is that spent in?—In repairing the pavements and paying off the bondholders and the annuitants. There are several annuitants on it.

7015. What debt do you speak of with respect to the bondholders?—The debt incurred by the paving commissioners when the Act of Parliament was obtained.

7016. It was originally created for the purpose of improving the town, was it not?—Yes.

7017. Is that repayable by instalments?—It is, I believe, repayable by instalments, and they buy them off as they fall due.

7018. I suppose that the 9*d.* rate and your corporation income pays the interest and part of the principal of the former debt for the town hall, the market place, and so on?—Yes, the corporation income pays everything it possibly can pay to save the making of a rate, and the paving commissioners spend the full amount of their income, raised by the rate allowed by their Act, in repairing the pavements, improving the streets, watering, &c., the water used for watering the streets being a mixture of the aforesaid water and sewage from the river Lodden.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday, 19th July 1869.

PRESENT:

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

The EARL of ROMNEY.	EVAN MATTHEW RICHARDS, Esq., M.P.
The EARL of DUCIE.	FRANCIS SHARP POWELL, Esq.
Sir THOMAS WATSON, Bart., M.D., F.R.S.	BENJAMIN SHAW, Esq.
Lieut.-Colonel EWART, C.B., R.E.	JAMES PAGET, Esq., F.R.S.
JOHN ROBINSON McCLEAN, Esq., M.P., F.R.S.	FRANCIS THOMAS BIRCHAM, Esq.

W. Menzies, Esq.
9 July 1869.

(56.) WILLIAM MENZIES, Esq., examined.

7019. (*Chairman.*) You are deputy-surveyor, are you not, of Windsor Park and Forest?—I am.

7020. What does your office bring under your charge?—Practically the whole of the Crown property attached to the domain of Windsor, in so far as the parks and forests and the labourers employed upon the Crown property are concerned, and all the houses, with the exception of those adjoining the castle; those are matters of which I have the charge, and where I have resided for nearly 20 years.

7021. What particular circumstances have led you to the study of sanitary matters?—I have some large establishments under my care, such as hunting establishments, where there are many people congregated together. I have the charge of private houses, and a number of cottages. I have been concerned, directly and indirectly, for a good many large public buildings, such as Wellington College and Broadmoor, and been consulted about villages in the neighbourhood of the Crown property, and directly and indirectly have had something to do with them all. I have also the charge of the river Thames immediately opposite the Crown property at Windsor, through which the drainage of the town of Windsor passes, and opposite which the drainage of the town of Eton is discharged; that I have had for a good many years.

7022. How far is that under your direction?—The river is under my charge, I believe, as far as considering any measures necessary for the protection of its purity and the enjoyment of it by the Court are concerned. The land through which the drainage of Windsor flows is also, to a certain extent, under my charge. I have also for the last few years been both advising and consulting the Royal Engineers in a good many sanitary matters.

7023. Beyond Windsor, or only connected with Windsor?—Such, for instance, as Aldershot and Sandhurst drainage, I had a great deal of consultation with the Royal Engineer who was in charge at those places, and lately I have been with Colonel Ewart several times to inspect the drainage at Hounslow.

7024. To what conclusions on drainage questions has all this experience brought you?—With regard to towns themselves, in consideration of the objectionable state of the present system of the drainage of Windsor and Eton for instance, which was discharged partly through and partly close adjoining the Crown property, and which was in such an objectionable condition, I was practically forced into studying the whole subject with the hope of finding some remedy, but my investigations more particularly led me to examine those and similar towns. I was also forced in the ordinary course of my duty to consider the sanitary construction of dwelling-houses and cottages, the treatment of subsoil water, the treatment of rain water and rivers, partly for water supply, and also to alleviate the difficulties and nuisances that arise in times of flood. These are the branches which my investigations led me most to study.

7025. Will you state generally what are the defects of the drainage of Windsor and Eton, and whatever remedy ought to be applied, what it is that has prevented that remedy being attempted?—The drainage of Windsor and Eton might be taken as a very good specimen of what generally the best approved system of drainage was 20 years ago, because that is just about the time that the works were executed. They were the first towns drained in the Thames valley upon what was then called a thorough system of drainage by which everything was gathered together, sewage rainfall and subsoil water and everything, and

discharged directly into the river without any system of treatment whatever at the outlet.

7026. Was that by means of a great main sewer?—By one great main sewer, big enough to take everything.

7027. Did all the houses drain into it?—All the houses were drained into it; but it was scarcely completed before the evils of that system become apparent. I am not speaking of the sanitary state of the town, but of the evils outside. Discharging as the drainage did into a river like the Thames, which is half a river and half a canal, immediately there came a great flood the whole of the worst and filthiest of the sewage was borne up from the bed of the river and discharged over the banks into places from which it could not recede, because the bank of the river almost the whole way along is higher immediately adjacent the river than it is a couple of hundred yards off. That happened every winter and happens still. The evils of this were so great that the attention of everyone was drawn to it, and then came a time, about 10 years ago, when there was a bad outbreak of fever in the town and there was a long investigation. One of the causes might have been that there was not a complete communicating drain with every house, but by far the greater proportion of them were joined by that time; and also there was not sufficient ventilation; there was not, probably, sufficient flushing; but the evil, at least a very great part of it, escaped observation, and was only found out afterwards. It was this, that in consequence of the enormous proportion of sand which went in off the streets and lodged in a long line of drain from the town to the river, quite two miles long, an immense accumulation of the most fœtid sewage always was remaining there, and that is the matter which during the heaviest floods was constantly borne out into the banks of the river and left there putrifying. After many years of working at that subject, and examining every town to which I could possibly get access, I came to certain conclusions upon the subject, which were published at the time, in 1864 or 1865, and they may thus be summed up. The first conclusion was, that unless a conservancy board put a compulsory prohibition on towns to take this sewage matter out of the river, it would never be done at all, because it was evident it never could be done as a remunerative process where pumping had to be employed. The second conclusion was, that unless the towns had power to purchase land by compulsion they could not go to work; it was impossible. Then the third conclusion was, that until there was a double system of drainage in the town itself by which the rainfall could pass directly into the river, and the sewage with its attendant flushing water and household water was conveyed in one drain by itself to the pumping station, it never would be thoroughly accomplished. Then the fourth conclusion was, that there should be an efficient and an abundant flushing at all times and in all weathers, not only along the lines of the main drains, but that each house should have the means of flushing its private junction from its own cistern, and that, not by driblets let away from taps or trusting to a bath, or any accidental circumstance, but by a complete flushing power under control. Then the last conclusion was, that along the towns of the Thames valley, for instance, where the water was very hard, (and this (applies to most houses), there was far too little attention paid to the saving of the rain water for domestic washing purposes and matters of that kind, and that it was a double mistake to pass it, as was done in most cases, into the foul drains. Those were the conclusions I arrived at.

7028. I understand generally that the conclusions which you came to were, in the first place, that the conservancy board should have more power to set the local authority in motion?—Yes.

7029. Secondly, that the local authority should have compulsory power of purchasing land for the utilization of sewage?—Yes.

7030. Thirdly, that all rain water and sewage should be separated?—Yes. That all rain water and sewage should be separated.

7031. And lastly, that the drains were to be flushed with larger water supply and economy?—Yes; not only along the lines of the mains, but that each house to be perfect ought to have the power of flushing its own subsidiary drains.

7032. Is there a conservancy board in existence?—There is now an efficient one.

7033. The local authority in Windsor is the town council, is it not?—It is the board of health; it is not the same body as the town council, although, practically, they are almost the same.

7034. You mean that they have adopted the Act, and elect a local board of health?—Yes, that was done long ago.

7035. So that they have adopted the general powers of the public Acts?—Yes, perfectly so.

7036. What power has the existing conservancy board over the local board of health?—They have the power of serving them with notice. The Thames Conservancy Act was passed a year or two afterwards, and they immediately served notices upon all the towns. I only give Windsor as a practical illustration, because probably I know it best; but the Thames Conservancy Board also served notice upon the other towns to take their sewage out of the river.

7037. But would the Thames conservancy board have any power over the local board of health, except with regard to the pollution of the river?—They have the power of fining them if they do not do it.

7038. Upon any other subject but the pollution of the river?—Not that I am aware of.

7039. Do you think that the conservancy board could be made to deal with all the subjects of local government, and not merely with the pollution of the river?—No, I think not.

7040. How is the conservancy board constituted?—There are so many members appointed for the lower part of the river (something like 20) up to Staines; and then there are five members, elected for the upper part of the river, from Staines to Lechlade in Oxfordshire, and their jurisdiction extends for three miles on each side of the river.

7041. Have they attempted to exert the power which they have to compel the local board of health to desist from polluting the Thames?—They have served notices upon the towns, and they have done everything in their power to make them proceed.

7042. What is the next step?—The questions which were immediately raised were of course the difficulties in the way of taking the sewage out of the river. That gave rise to an immense amount of discussion amongst the towns themselves as to various plans, and there were many engineers called in who submitted plans, all of which were called in question, some for one reason and some for another, until the boards, four of them, joined together, and after various attempts to get a Commission or a Committee of the House of Commons to investigate the matter, in which they did not succeed, appointed a committee themselves, and asked the Home Secretary to give them professional assistance to advise them in the matter. In the spring of 1868 the Home Secretary appointed Colonel Ewart, who went most thoroughly into the matter, heard everything that those committees had to say, and investigated the whole subject for them, and reported to the Home Secretary, in October last year, what his opinion was; and the result of that has been that not only those four towns, but three or four more on the river, have accepted Colonel Ewart's report as their basis for action, and the principles upon which the drainage should be conducted.

7043. Are the conservancy board obliged to wait while the local boards of health make up their minds what plan to follow?—They could not in reason do anything else. It would be practically impossible to compel people, who were apparently and, as everyone knew, were quite willing to proceed in the matter, and had spent considerable sums of money in getting

plans prepared,—you could not really compel them as long as the principles of drainage which were so important were called in question and were not definitely settled.

7044. Then, in fact, do you think that while that question is undecided the law must practically be hung up?—Not exactly. A reasonable case must be made out first to show that the difficulty is great; they had made every exertion, and had not been able to arrive at a satisfactory conclusion, and in that case both the Home Secretary and the conservancy board were so satisfied of the reasonableness of the representations made by those different towns, that the Thames Conservancy Board did not press the matter. Now that they have obtained a definite opinion, and that to all appearance they have satisfied themselves of the principle, I do not imagine that the Thames Conservancy Board would have any hesitation at the proper time in putting in force their powers.

7045. Were the powers of the Thames Conservancy Board such as that, if the local board of health apparently was reluctant to come to a conclusion, or several boards of health all interested in the same plan refused to agree to a principle, they could compel some action?—They could compel them by fine.

7046. What is the nature of their notice, and what is the nature of their power of compulsion?—They serve a notice to take the sewage out of the river by a certain time, and then if that is not done they have the power of levying a fine, not exceeding 100*l.*, and a sum of 50*l.* a day until it is done. The Act is the 29th and 30th of Victoria, chapter 89, and is called the Thames Navigation Act of 1866.

7047. Do you think that the conservancy board have as much power as they ought to have for this purpose?—I think they have as much power as people would stand. I do not think that the powers of the Thames Conservancy Board extend half far enough, as far as district goes.

7048. But as far as the extent of the power goes you think it is sufficient?—I think it is quite as much as the local boards or anyone would bear.

7049. Does it not include the whole basin of the river?—No, it only goes to Lechlade in Oxfordshire.

7050. Do you think that they ought to take the whole basin?—Decidedly. On the tributaries people may do anything they like at present.

7051. Do you think that in so large a basin as the Thames it would be necessary, supposing the conservancy board had the whole basin under its chief control, to have inferior boards under it connected with the tributaries?—Yes. I do not exactly know how, but I do not think that the same people who consider the details that are necessary for the lower part of the Thames conservancy, such as the management of ships and buoys, and all that sort of thing, are the people who should have the details before them of the upper conservancy, where entirely different interests are concerned. They should work together in some way, but there should be some separate board, or some other way of dealing with the upper part of the river.

7052. Is the subject that is referred to them exclusively the saving of the river from pollution, or do they also deal with the question of agricultural drainage into the river?—I forget whether it is in that Act, but I know that they do, because I have been engaged with them considering it myself. All questions affecting the treatment of the river, to alleviate floods, or to store water, or to repair locks and weirs, and mills and dams, anything of that kind must pass through their hands.

7053. Could they deal with the arterial drainage of water which naturally would gravitate into the river?—No, not at present.

7054. Do you think that they might have that power?—I wish they had, or some other body.

7055. Have you considered whether the two subjects could be referred to the same body?—I think that the present body should be as it were broken up a little more. It is necessary that there should be combined action between the whole in some respects, but it is inconvenient, and gentlemen who are interested in the navigation purposes down at the mouth of the river cannot form much of an opinion, or be expected to interest themselves much in important questions in the interior of the country.

7056. Is the taking out of their subjects everything connected with shipping sufficiently done by Teddington Lock being considered the boundary?—Yes.

7057. So that in fact the highest point of the tide is the point which marks the boundary of their operations?—Yes; but the old powers of the Thames Conservancy Board used to extend to Staines.

7058. With regard to the local boards in the first place, is there not some difficulty in dealing with so many local boards as there must be along the course of so large a river, in making them agree to any particular plan affecting them all; supposing, for instance, Windsor agreed that Colonel Ewart's plan of sewerage was the best, and another town on the river disagreed, would not that produce a dead lock to the proceedings of the conservancy board?—It would come to be a legal question. If any town proceeded, for instance, on the terms and principles laid down in Colonel Ewart's report, the Thames conservancy, I apprehend, could not interfere until some evils came apparent, supposing they did become so.

7059. But do I understand you that, supposing Colonel Ewart to have satisfactorily shown a reasonably good plan, the conservancy board could proceed then to compel all towns to take action, although they did not agree that Colonel Ewart's plan is a good one?—No doubt they will do that. Of course the local boards have the power of appeal to the Home Secretary under the Thames Conservancy Act, and then it is for him to judge whether they have a justifiable reason for holding back.

7060. Supposing Colonel Ewart's plan to be recognized as the right plan, and the conservancy board upon that proceed to compel action, what more power do the local boards want to enable them to carry out that plan?—I do not think that they require any more than they have now, since they have got compulsory power of purchasing land both inside and outside their district for drainage purposes.

7061. Is that under the Act of 1867?—Yes.

7062. You seem to think that, in order to carry out this plan effectually, there must be a greater command of water for flushing. Does not that introduce a different set of subjects, namely, that of water supply?—It affects it of course; but it is doubtful, when it is practically put to work on a right footing, whether any more would be required, or to any serious extent.

7063. Where, for instance, could the local board of Windsor get a supply of water for carrying out the flushing system that you recommend?—The supply of every town in the Thames valley is practically unlimited from the river or from the wells immediately adjoining the river.

7064. We have had it recommended by Mr. Rawlinson and others to use this system of conservancy boards with inferior boards connected with the tributaries, not only for purposes connected with the river, but for water supply, and for all the purposes of local government. Have you considered the possibility of so using those boards?—No, I have not considered it sufficiently to give an opinion.

7065. Supposing this plan which you have been describing to be carried out effectually in the towns along the Thames, how far do you think that a similar system could be carried out in villages, and especially villages which are gradually growing into towns?—From examination of a great many villages I have come to a sort of general idea that when there are something like 2,000 people living upon half a square mile, that is 320 acres, then a system of drainage becomes necessary; before that time it may be treated differently.

7066. I presume you are of opinion that in small

villages, in a perfectly rural district, it would be hardly possible to carry out systematic drainage?—Yes, perfectly impracticable; there means of another kind should be adopted.

7067. Do you think that though impossible it would be desirable?—Yes, in the more correct sense it may be a desirable thing to do, but not necessary.

7068. Do you think that in very scattered and thinly populated rural districts sufficient drains can be carried out by attention to individual cottages?—Yes, individual cottages where there are gardens may, and in fact do, work perfectly well.

7069. But when they have arrived at the density of population which you have specified, then you think that systematic drainage ought to be adopted?—Yes. They get too crowded and too mixed up for individual treatment, and that plan of taking an area of half a square mile includes the site of the houses and gardens attached to them.

7070. Who, do you think, in such a place should be the local authority to see after such an object?—That is a very difficult question at the present time; in fact the authorities at present are so difficult to move in the matter, and so difficult to be got at, that it seems almost impossible to get anything done.

7071. What authorities do you allude to?—The sort of sub-districts appointed by vestries in different districts and in different parishes; they get into such a hopeless confusion that I scarcely know a case of any village that really has done anything.

7072. The subject of nuisance removal is committed by the law rather to boards of guardians than to vestries?—Yes, and it works quite well up to that point at present.

7073. Do you think that if the subjects now referred to vestries were in addition to nuisance removal referred to boards of guardians they would be properly attended to?—I would have more faith in boards of guardians than in vestries, from what I have seen.

7074. Is there any other body that you think would be better than either?—Taking it as a general matter, the board of guardians would be better than any other that I know of.

7075. We have had the highway boards recommended to us where they exist; what do you think of them as the local authority?—The other would be preferable.

7076. The reason why they have been preferred by some persons is, that the highway districts, being more conterminous with the petty sessional divisions, would have executive officers ready, which the board of guardians have not, for the purposes of local administration; do you see anything in that reason?—If there were administrative reasons that make the one preferable to the other, either of those two might do the work that might be called for. No great reason appears for preferring one to the other as far as the practical working is concerned, but there is great objection to leaving it as at present.

7077. As the vestries now perform the functions committed to them by Parliament by committees, do you think that if the boards of guardians were made the local authorities they should for local government purposes have a committee formed out of themselves, as, for instance, is now formed for assessment purposes?—I do not see any reason why they should not. A good deal of objection would be made by the vestries at first. They should have a chance of doing the thing for themselves within a certain time.

7078. You have recommended boards of guardians to have local government functions committed to them: do you think that those functions would be discharged better by a committee of the board of guardians for the purpose, instead of by the whole board itself?—Yes, the difficulty is that when the board of guardians give notice to the vestries to proceed, if the vestries are in different parishes, the vestries simply do nothing, and then the board of guardians are helpless.

7079. The fifth clause of the Nuisance Removal Act of 1860 provides that the board of guardians for a union may appoint a committee of their own body for particular parishes; do you think that that power vested in the board of guardians to appoint committees for particular parishes in their union might be used for local government purposes?—Where boards of guardians or highway boards mark out a district for drainage purposes, which must constantly be irrespective of the parishes, it should be constructed into a drainage district, and should have the power of making its own plans and taking its own responsibility; and in the case when this new parish, or this new drainage district, does not proceed to act within a certain time, then the board of guardians should have power to act for them, as that is really where it sticks at present.

7080. How far do you think that the inspection of nuisances is satisfactorily carried out by boards of guardians?—The present system of the inspectors of the vestries is as bad as possible.

7081. But the board of guardians appoint the inspector of nuisances, do they not?—They do in small rural districts; but when you come to villages where there are little vestries, when there is a meeting to discuss what should be done, the vestry has an inspector of nuisances, who really guides them.

7082. Where boards of guardians do appoint inspectors of nuisances, how far does the system work well?—The board of guardians are quite right in proceeding with the report of their inspector of nuisances at present, but it is after that where the difficulty begins.

7083. Do they generally appoint good inspectors and pay them well, and do the inspectors effectually do their duty?—Speaking of those I know, namely, the inspectors of the vestries, they are inefficient men. They are people who have generally been unfortunate in business, and have failed in pretty nearly everything they have tried; they have a little smattering of knowledge sometimes and given to talking, but certainly they are not people to be judges and advisers in such matters.

7084. In fact the inspectors of nuisances in country districts to your knowledge are not either paid or qualified to be good inspectors?—Certainly not.

7085. What sort of men do you think ought to be inspectors of nuisances?—Of course there must be a lowest grade of some sort. Whether it should be the police to originate the step, or perhaps the medical officer of health of the union, I am not quite prepared to say, but probably both should have some sort of power.

7086. In the first instance, do you want more than a man who will actively and independently bring information of the existence of nuisances?—No; only he must be independent of the ratepayers in every way.

7087. The first step is to give information of the nuisance, is it not?—Yes; that might be left, perhaps, to the head of the police of the district, with the advice of the medical officer of the union.

7088. You do not want a skilled man to give that information?—Not highly skilled.

7089. Where you want the skill both medical and engineering is a subsequent step, the nuisance having been informed of and proceedings being taken to remedy it?—Yes, quite so. Such arrangements might do well enough for the beginning of the machinery, but after that for each county or district of that sort, there ought to be some person of a very different class altogether, whose duty it should be once a year, at least, generally to inspect each district, and to speak with something of greater authority, and not to wait, as is done at present, until there has been some dreadful outbreak, and then everybody is running in alarm to do the first thing that comes up.

7090. Are not the inspectors who are now appointed generally men who have got other occupations, and have very little time to attend to this particular duty?—Yes; all I know are in such a position.

7091. Do you think that the inspectors should be

men who have nothing else to attend to; do you think that they should be men whose business it should be perpetually to be going about over a large area seeing that nuisances were abated?—It would be rather an expensive process to have a man for that alone; but if it could be conjoined to the duties of the police, it might be economically worked in that way.

7092. What sort of area do you think that a man ought to inspect? Should it be a whole union?—That is about three or four parishes in my neighbourhood, or perhaps sometimes more.

7093. Then in your neighbourhood a man could easily inspect the area of a union?—Yes, quite well, if he was kept for that alone.

7094. What further powers should be given, in your opinion, to the local authorities as to the regulating of cottages, both their building and their draining, and their size and ventilation, and so on?—That is a very large question, and I never could see any possibility of passing any Act whatsoever in any shape or way compelling people to build cottages; but it appears reasonably legitimate and a right thing to do, to say that if cottages or houses are built they shall come up to a minimum standard in sanitary regulations.

7095. You mean with regard to the number of cubic feet of air per room?—Yes, and a great many things besides that, not only the cubic feet of air per room, but the floor space as well. In fact there are many matters which should be defined. No legislation would probably work satisfactorily until those essentials are fixed, because, as it stands at present, there is a law that says that houses unfit for human habitation may be proceeded against; but the question of what is unfit for human habitation is such a wide one, and opens the door to such an enormous amount of discussion and wrangling, that practically it is almost a dead letter. In fact I know many cottages, a very great number indeed, that are not fit for habitation for a pig, but nobody can do anything with them.

7096. Can you state briefly what details you think should be fixed by legislation?—A few months ago I published a work upon that subject. Primarily there should be certain stipulations as to the soil upon which houses should be built; that is to say, as to the depth at which the subsoil water should be underneath the floor; then there should be certain stipulations about the keeping down of damp, and that there should be a damping course in every case. There should be some stipulation that the walls should be not less than a certain thickness, because we constantly see them built of only one brick thick, and a little wood in the walls, through which all the winds blow every day in the year. Then the size of the living room and the height of the ceiling should be also fixed; then the minimum size of the windows might be fixed; then the minimum size and width and what is called the rise and go of the staircase ought to be fixed, because it is the commonest thing possible to see a staircase so steep that children and old people are seriously injured in consequence. Then with respect to bedrooms, certain things should be specified as to the amount of window light, that is to say the size of the opening of the windows, and as to partitions where there are bedrooms there ought to be absolute partitions for common decency's sake, because in many cases there is nothing but curtains. Then of course there should be a water supply as far as it is reasonably good within the district, and except there is a certain amount of water provided, a cottage should not be built at all. It is very nearly essential, if not altogether so, that there should be spouting upon the house, because you could scarcely have a dry house without it. Then, for the privy arrangement of each cottage, it is essential that each cottage should have its own, and also that it should not be permitted to leak into the subsoil. That is a great danger.

7097. Should you not be afraid if the law entered into such minute particulars that you might have a deficiency of cottage room for labourers, particularly as cottages built by landlords are built generally at very great pecuniary loss?—That is the only objection which I have ever been able to see to the law, but it would probably cure itself in time, because there would be great advantages immediately from such a standard being fixed. The minimum should of course be made as low as it was possible to be for sanitary purposes, but the moment that minimum was fixed by law we should immediately have all the materials, especially the woodwork and all the other materials of cottages, made wholesale by contract, and not made upon the spot as they are at present, but they would be cut out wholesale by machinery in all probability in the country in which the timber is grown. Then the fixing and the labour of putting them up would be also diminished to a great extent.

7098. But still supposing all those exertions made, and that the cottages built, as you think they ought to be built, cost at least 4*s.* a week, and labourers are not able to give above 1*s.* 6*d.* a week, how would you reconcile those two facts with your proposal?—The thing will rectify itself in a short time to a great extent. The benefit gained would probably more than counterbalance any evil that was caused by it.

7099. Would you give the power of making such regulations to the local authorities in a country district?—Not to make regulations themselves; they should be fixed by an Act of Parliament or by the Home Office, and the local authorities, having this rule in their hands, would have a guide which would immensely facilitate their labours.

7100. You think that such a board as the board of guardians, for instance, might be entrusted to enforce such regulations by law?—I think so. The feeling of the country amongst the middle and upper classes, and all the better informed part of the community, appears to be so strong upon this subject that it could be carried out.

7101. What is your opinion as to measures being necessary for the regulating of rivers in winter time?—It is of the very first importance in many ways. There are so many interests that would be benefited by it, that conservancy boards should turn their attention to it; because, taking the Thames as an example, where what can be done immediately in my own neighbourhood, is now under consideration, the benefit of lowering the flood water would be this, that the navigation would be improved, because barges would get up and down at all times so much better, and the millers would be benefited, and agriculturists in the neighbourhood would be benefited by it, and the towns themselves would be benefited in a sanitary point of view, because every foot that the river can be lowered in winter places an immense area nearer the river fit for irrigation purposes; the rise of the land upon each side of such a river as the Thames (and that applies pretty nearly the same to most rivers that I know) from the banks is so slight that you are obliged to go a long way to get land for irrigation purposes sufficiently above flood level. If you can take even one foot, or two, as we hope to do immediately in the neighbourhood of Windsor, you will make available a large area of ground at once for irrigation purposes that is not so at present.

7102. What difference would you make in your last answer with reference to navigable as compared with non-navigable rivers?—In navigable rivers I see less objection to retaining mills and weirs. Weirs are essential, and therefore mills may follow, but in non-navigable rivers, such as the Blackwater near Aldershot, the sooner the conservancy board, or whatever authority has the power over it, proceed to do away with those mills the better.

7103. How are the expenses of the conservancy board paid?—The Thames Conservancy Board has large funds at its disposal, obtained from the shipping and other dues which they have in the lower part of the river. In the upper part of the river they have 5,000*l.* a year to depend upon, obtained from the water companies of London in consideration of their purifying their sources of supply. They have also the dues arising from any navigation purposes,

and they have the right of taxing any water companies which take water immediately from the river in the upper reaches.

7104. Can you tell us what is their staff of officers and inspectors?—They have a head engineer, whose duty extends from the mouth of the river as far as their conservancy board extends, and they have a sub-engineer or inspector on the upper part of their territory.

7105. (*Earl of Ducie.*) With respect to those sub-inspectors or inspectors of districts that you referred to, I think you stated that you would expect them to give their whole time to sanitary inspection?—If they are to be given to the whole union, that would probably be necessary.

7106. Do you propose that they should have any larger functions than those which the present inspectors possess, or should they exercise much closer inspection?—They should have much better defined rules to go by than any of the present inspectors have.

7107. Would you have them going about their districts throughout the whole year looking out for nuisances and defects?—Evils are to be prevented only by constant attention.

7108. Would you recommend perpetual house to house visitation?—As far as the temper of the people would submit to it.

7109. You have also proposed that in certain districts the board of guardians should be the local authority; do you think that the board of guardians would be likely to take the initiative in country districts in a sufficiently scientific manner?—They should have power to call in people to advise them.

7110. Do you think that they can be trusted to take the initiative when any operations which they might carry out would involve expense to the rate-paying classes?—They should not in the first instance be the people to carry out the works themselves; their duties at first should be to give notice, stating in what particulars any cottage or house or district failed, and then direct the people to whom the cottage, or district, or whatever it was, belonged, to proceed with the matter, throwing the responsibility on to those individuals; then if those individuals did not proceed, the board of guardians, as the next resort, might call in people and tax the district specially for the purpose.

7111. Under these circumstances, do you think that they safely might be trusted with the initiative?—I think if they do not take the initiative it is very seldom indeed that the people who are doing a wrong thing would take the initiative themselves.

7112. (*Lieut.-Col. Ewart.*) You are conversant with the working and powers of the conservancy boards of the Thames and the Lee, are you not?—Yes, with reference to the former river.

7113. Do you think that it would be of advantage to have similar conservancy boards for other rivers?—It is most desirable.

7114. Would you give those conservancy boards greater power, or limit them to pretty much what they do at present?—You may take the Thames Conservancy as a good guide. At the same time, in rivers where the supply is not used for drinking purposes they might be treated with perhaps a little more leniency than the Thames has been obliged to be where drinking water is taken from it.

7115. Would you give the conservancy boards greater power of control over the towns lying along their respective rivers than those to which I have alluded?—No, I think not.

7116. Supposing you establish a central authority, such as the Poor Law Board, for example, do you contemplate having an intermediate authority between that board and the central authority?—Yes, I should like to see an intermediate authority, like the quarter sessions or something of that sort, acting for a county.

7117. Some county authority?—Yes, that is preferable to a watershed. Although a watershed seems the natural definition of districts, still I do not see how it ever could practically be worked.

7118. In the present system of drainage which you have described as running into the Thames at Windsor, have you found inconvenience at flood times from the mouth of the sewer being closed?—Very great indeed; that is a great evil.

7119. Does it not render ventilation and trapping essential if you have the mouth of the sewer closed at flood times?—The mouth of a sewer being closed up entirely is a dangerous thing at any time. It is wrong in every way, and situated, as many sewers on the Thames are, under the flood level with the chances of the floods rising and shutting them all up, so that the sewer in fact becomes then a sort of back tributary of the river, is one of the worst principles.

7120. Supposing the sewer to be trapped, what becomes of the noxious gases?—Then they must flow in every direction; there is no telling where they go to.

7121. Have you any doubt in your own mind as to the power of all large towns to combine and get rid of their drainage by some system of combination?—There is no legal difficulty to prevent them combining.

7122. I mean is there any engineering difficulty?—I do not see that there are any engineering difficulties that could not be overcome; it is a question for the two or three towns by committees of themselves to consider whether it is the most expensive or the best thing that they can do. I see no other difficulty in the way; it is simply a question of the consideration of the expense, and other considerations as to the best scheme that can be adopted for them.

7123. But you consider that, subject to engineering and financial arrangement, all large towns can dispose of their drainage by a combined system?—I do not see any difficulty in the matter. An instance could be taken from five towns, in what are commonly called the Pottery districts, which I examined for my own information some time ago, and which all work into the tributaries of the same river. There appeared to be no difficulty whatever in a combined scheme of drainage for those five towns.

7124. You are aware, are you not, that at present before money can be borrowed it is necessary for the plans to be submitted to the Local Government Act Office?—Yes, I am aware of that.

7125. Do not you think it is desirable that when those plans are carried out there should be some system of inspection as to whether they have been carried out in accordance with those plans, or what guarantee is there at present?—Very little indeed; but there has been so little spent in the Thames valley within the last five or six years, or rather more, that there is hardly an instance of it; they have been discussing and disputing the whole time.

7126. A great deal has been done or contemplated at Oxford, has there not?—Not in the way of money spent in drainage purposes; there has been an immense amount of discussion, but there has been no money spent yet, except for plans. The town of Slough borrowed money about four or five years ago, and laid in their main drains with it, but that is the only case that I know of.

7127. Have you had an opportunity of observing whether the work at Slough was successfully done?—It is all covered up. There is so much water running through it that I do not know what is to be done with it when anybody comes to treat it afterwards. There is as much running out of it as will turn a mill, and where it is to be taken to when they put in the foul drainage is not easy to imagine.

7128. (*Mr. Bircham.*) You do not suggest that the combination of towns for getting rid of their sewage should be the subject of general legislation, but that each combination must be left to its special circumstances?—It must arise from their own individual convictions and responsibilities. There could scarcely be any general legislation upon the matter.

7129. The physical and other considerations would be so different in different cases?—Yes. A good illustration could be taken from the three towns in

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my own immediate neighbourhood, that is, Windsor, Eton, and Slough. Any person would say that if any three should combine, they were the three, or rather two of them, Eton and Slough.

7130. What you intended to convey to the Commission rather was that, where there were three or four towns conveniently situated with reference to each other, they would probably be able to find out a plan to get rid of their sewage in combination?—Yes, certainly. There does not appear to be any difficulty.

7131. They would make it the subject of special arrangement?—Certainly. There is no legal difficulty. It is entirely a question of their own responsibility as to what they will adopt.

7132. I understand that you would favour for health purposes combinations of parishes, either conterminous with petty sessional districts or with those of boards of guardians, or boards of highways, but at all events groupings of parishes into health districts?—Yes; you could not avoid that if the scheme was to act efficiently.

7133. Then each of those groups would have its sub-inspector, if I understand you?—Taking it as a rough rule a board of guardians district should always have an inspector.

7134. Then you would have, would you not, a further inspector of a superior grade?—Yes, entirely different altogether.

7135. And he would be making circuits, if I understand you, throughout the district?—Supposing that he was for a county, he ought to inspect that county or his district, whatever it was, probably once a year, or whatever number of times he might think necessary.

7136. To whom would he report?—Probably to the quarter sessions, and also to the Home Secretary at the same time. He ought to have as it were a combined position.

7137. From whom would you expect action for compelling the local authority to act upon his report?—It might come in the first case from the quarter sessions, and finally from the Home Secretary.

7138. Would you give power of positive interference in the making of works or the removal of nuisances?—In extreme cases. It would seldom be used, but of course the knowledge that the power was with him would in many cases effect the object.

7139. Are you of opinion that if those inspectors conveyed to the boards of guardians in writing their opinions and advice, and if those opinions as to the state of particular parishes with the advice given were published, it would have a salutary effect in correcting nuisances?—I have great faith in publishing good knowledge of any kind, especially in those matters. As much would be effected by that as by compulsory law in the last resort.

7140. Does your experience lead you to consider that it is a want of appreciation as much as a disinclination to spend money which causes the apathy in health matters which exists in rural districts?—It arises from many causes, and in a great degree from ignorance. Many people spend money in what they fancy are sanitary measures which are often wrong, but, on the other hand, much arises from indifference and carelessness, and wishing to get as much as possible out of the cottages and places which people build. It is a common thing to find small tradesmen build a lot of cottages perfectly regardless of all sanitary essentials, and then of course the people who live in them must be their customers. Many such cottages are now paying 25 and 30 per cent. upon what they must have cost. That ought scarcely to be permitted.

7141. We have it as your opinion that either by a byelaw suggested or corrected by a central authority, or by positive legislation, more or less minute details in the control of cottage building should be made binding?—Yes, probably so.

7142. Have you any experience of the working of highway boards, whether they lead to economy and the better management of the roads?—No; I would rather not give any opinion upon that.

7143. (*Mr. Shaw.*) As regards the building of cottages there are evidently two ways of controlling them, in the first place there may be a general set of rules sent from the central office, to which the builder of the cottages may be obliged to conform or to submit to a penalty; on the other hand, there may be certain matters, such as drainage, ventilation, and so forth, as to which he may be compelled to conform to the orders of the local board. Of course under the second plan the local board has more discretion than under the former; which of those two plans would you think the better?—It would seem preferable that the minima fixed should not be left to the local board.

7144. Do you think that it would be possible to define with such accuracy in byelaws those regulations that you might make them once for all, and not have to vary them in particular cases?—There are certain general principles which might quite safely be laid down; and any local alterations that might be made might very properly pass the supervision, or the sanction of the sanitary inspector, say of the county, subject to reporting to the Home Office from time to time.

7145. In the metropolis, before beginning to lay or dig out the foundation of any new house or building, it is required that notice in writing shall be given to the vestry or board by the person intending to build, and then the "Metropolis Local Management Act" says that all drains shall be made in such direction, manner, and form, and so forth, as the vestry or board shall order; is not that a more convenient form, especially if an appeal be given? Would it be possible to lay down certain general rules which would operate in every case?—If you will examine the Metropolis Building Acts, you will find a number of things absolutely specified, and it is just a question how far those should be specified, and how far they may be locally modified.

7146. To come to what you were speaking of, namely, the water supply, what would you propose to enforce by a general law as to the water supply in cottages?—If you would be kind enough to look at the 29th page of my book, entitled, "Suggestions for the Sanitary Improvement of Cottages and Villages," you will find there stated what is my experience upon the matter.*

7147. Here you speak partly of wells and partly of the storage of water?—Yes, because one is obliged to take sometimes the one and sometimes the other.

7148. Therefore you must have a discretion in some body to say which of those plans shall be adopted?—Yes, of course you must have a certain amount of discretion.

7149. Would not that practically be so as regards several of your rules? You say, for instance, that each cottage is to have its own privy, and that the privy must not leak into the subsoil; you could hardly lay down for all soils a general rule as to the method of preventing leakage, that must be left, must it not, to some local authority?—If you lay down the specific rule, that it shall not leak into the subsoil there could not be any difficulty in examining and seeing whether it does, or whether it does not.

7150. You would be content, would you, with the storage of water as a means of supply to cottages?—Yes, many depend upon that, and they get on very well.

* *The Water Supply.*

It is essential that all cottages and dwellings have a wholesome water supply, if possible, within a maximum distance of a hundred yards.

A bucket and chain are probably the best means of raising this water, as they are least liable to get out of order, and are the most wholesome.

Where storage of water is relied upon for a supply, the minimum that should be provided for, is five gallons per head per day for six weeks; and for this calculation a house with one bedroom might be rated for two people; a house with two bedrooms for four, and a house with three bedrooms for six.

Where the rain water is saved as the source of supply for domestic purposes, it is desirable that the house should not be overhung with trees, and that the tops of the chimneys should always be two feet higher than the ridge of the roof.

7151. Where is it stored?—It is stored in a great underground tank. I built two cottages last year, depending entirely upon that for their water supply.

7152. But the most difficult case seems to me to be where there are one or two detached cottages; how do you propose to provide for those?—That is the very case that I am speaking of. It is true they have not lived there many years yet, but these two built last year are quite detached from everything else.

7153. What is the water supply to them?—The water supply is from the rainfall alone.

7154. How is it collected?—In this way: in order to give the maximum rainfall off the roof that could come, slates were put upon it instead of tiles. Then as large a rainfall tank was built as would hold the rain that would last them for six weeks, as we very seldom indeed have a period over which no rain falls in six weeks; then if you build a rain water tank big enough to hold, say four or five gallons a head for a family of six or eight people for six weeks, you are pretty nearly sure to have sufficient.

7155. Where is this tank situated?—Underground; not under the house, but outside in the garden.

7156. How do they draw that water?—With a bucket and chain. There is no fear of their using more than they ought to do, because they know that it is all that they have to depend upon; and if you provide for a supply for that period, of five or six gallons per head for six or eight in family for six weeks, you are sufficiently safe of having it filled off a roof built in that manner, and you may take your chance.

7157. (*Mr. Richards.*) What drainage do you consider sufficient for an individual cottage?—For an individual cottage it seems preferable to have almost no drainage at all, because it ought to have a perfectly impervious cesspit or privy; then with regard to the remainder of the slop and sink water, instead of being thrown down a sink and running into some ditch close adjoining, it is best to put it in a bucket and spread it over the garden each day; in fact there are a number of places now where they have no other alternative.

7158. Would not there be a danger of percolation from the garden into the water tank?—No, the danger is reduced to a minimum if you take that stuff and put it over a garden that is growing vegetables, or some other crop, and spread it over it; danger will then be entirely prevented, or at all events reduced to the minimum; but directly you allow liquid to be stored in any adjoining place, it will never be moved until it is running over the floor, and then it gets into all sorts of places.

7159. Are we to understand it, as your opinion, that until there is a system of drainage an abundant supply of water would be rather a disadvantage than an advantage?—No, I should not say that.

7160. Would you not have any surface drainage at all to cottages?—No, not if possible, except to take away the rainfall off the roof, or from the road, or from the ground round the house, or something of that kind. I would have no surface drainage for the foul matter if avoidable.

7161. (*Mr. Powell.*) You stated, did you not, that where you get a population of 2,000 in half a square mile you would have arrangements made for drainage?—Yes.

7162. That drainage, I presume, would be constructed either by the owners under the superintendence of the local authority, or under their direction?—It would be constructed, not by the board of guardians, supposing they were made the first people to move in the matter, but by those who are to bear the expenses.

7163. But to the satisfaction of the local authority?—Yes, to their satisfaction, certainly.

7164. Supposing a manufacturer, which is a common case in some districts, were to erect 80 or 100 cottages in a cluster (and I am assuming proper arrangements as to space, roads, &c.), would you have drains constructed for that 80 or 100 cottages, the population of which would probably be about 500 or 600?—If they were a growing community and getting into a village, such as spoken of, with that number of people, then it would be essential, but before that time they should be treated the same as any other cottages.

7165. In using that phrase, growing community, you have touched upon the difficulty which has been mentioned by several witnesses from northern districts; how would you determine what is a growing community to be treated exceptionally, and what is not a growing community?—Whenever 2,000 people were living within that area, then it should be within the power of the board of guardians to give them notice to provide for themselves a system of drainage as they were getting so crowded.

7166. Supposing a manufacturer were to put 80 or 100 cottages, there being to begin with a population of 1,400 or 1,500, what should you do then?—That is the difficulty which arises with everything. There is certain to be a time when you come close to the line; but you must strike the line somewhere.

7167. Then it comes to this, that in purely rural districts, where agriculture alone is and is likely to be the industry, you would have one state of things, but where manufactures exist, or where they are springing up, you would have a different set of regulations?—Certainly you must; you could not carry out any system of sanitary laws applicable to a widely scattered community and a closely packed one.

7168. In effect you would have one system for purely rural districts, and another for districts where manufactures and mines were springing up?—Yes, just the same as you have in the Metropolis Act, regulations with regard to the building of houses, which would be inapplicable to rural districts.

7169. Do you think that the superior inspector should be a medically-educated gentleman?—That is doubtful. Medical evidence and assistance could not possibly be dispensed with. I think it is invaluable, but medical men alone are not probably the best people to be the entire judges of these matters, because some are inclined to advise beyond what is practicable, and thus much of their advice falls to the ground.

7170. Then your leaning would be against appointing a medical inspector acting alone?—Yes, certainly. I do not think that they are accustomed to judge of the amount or consider the responsibility of advising expenditure on works of that kind, with which civil or agricultural engineers are the best to deal.

7171. Would your notion be that the superior inspector should be a man more of the engineer class, with a medical assessor or adviser?—It would not be possible to combine the two requisites in one man.

7172. Your view appears to be that this inspector should be continually going round large districts, and that in case he saw that the sanitary arrangements in any (what I will term) sub-districts, were ineffective, he should have the power, and it should be his duty, to report it to the central authority?—Yes, he certainly should be a sort of medium of keeping up sanitary knowledge and infusing sanitary ideas into those people with whom he came into contact. If such a thing could be as that two people of co-equal authority (and I do not know which should be the superior) could work together, that would probably be the best thing.

7173. Has it occurred to you whether this superior officer should have any power given to him in the way of making those subjects popular, so that indifference and ignorance on sanitary matters should cease?—He ought to be residing in the district or county to which he belongs. It is an imperfect system when a bad outbreak of disease comes in a neighbourhood for an inspector to come down from London that people do not know, and they never see any more of him; he has not the same influence that a man in an independent position in the county himself would have, whom people could see and speak to, and who

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could take an opportunity of enlightening them upon the matter.

7174. Do you think it should be part of his duty to infuse into those districts a proper knowledge on sanitary matters?—That would probably be the greatest benefit that would be derived from him.

7175. And would you, in addition to those local authorities, still maintain a central authority with the machinery of inspectors and the like?—There must be a central authority under the Home Office in some way. Then the duties of the Board of Health in London would be limited, and concentrated knowledge would practically be only brought to bear in extreme cases.

7176. You would still contemplate cases where the local authority should be remiss, and where the county authority might not be sufficiently active, and where the central authority might interpose with advantage?—Yes, I think so.

7177. You recommended, did you not, that there should be a water supply to each house?—Yes.

7178. Was I right in understanding your meaning to be that, supposing there were to be in a given house sufficient provision for the storage of rain water, you would consider that supply for that house sufficient?—I would hardly like to say that altogether. When speaking of cottages, it is probable that many a time you are obliged to build cottages in places where you can get nothing else to depend upon, and therefore you must do the very best that can be done under the circumstances; but I should not like to build a dwelling-house, or a large place, depending upon that means of supply if it could be avoided.

7179. I suppose that you have regard to the fact that there are districts and places in the country where the rivers and wells are very deficient, or where you would not desire their use because the water is not of good quality?—Yes. Then you must of course do the best you can under the circumstances.

7180. I presume that if you have a separate board in each sub-district you would not have the board of guardians as they now exist, going out once a year?—No. I am not sure how they are elected at present.

7181. Going out by rotation, for instance, one half each year?—The people who are to pay for all those things ought practically to have something to say to the people who are over them.

7182. You think it desirable that the whole body should not go out each year?—Decidedly not, because every year the thing would have to be begun over again.

7183. Will you give us your views more accurately as to the power of entry into dwellings for the purpose of examination, and the like?—In the case of all new cottages there would be no difficulty.

7184. I am speaking of inhabited dwellings?—To pass a law for regulating new cottages without at the same time taking cognizance of the old places would be a mistake. A good deal would have to be left to the discretion of inspectors; but few cases would arise in which a man looking at a house, even from the outside, could not tell whether it was in a bad condition or not.

7185. Do you think that sanitary laws can be carried out with perfect efficiency without giving the authorities power to enter houses and disturb the privacy of a working man's household?—That should not be done more than is necessary. The police, for detecting crimes of any kind, have the power at present to enter into any person's house.

7186. Would you give the inspector of nuisances the same power of entry as you give to a policeman?—That is doubtful; he could tell from the outside of a house pretty well what it was like, and if anything more was necessary he could easily fortify himself with authority from the board of guardians.

7187. Then he should not have power to break open the door and enter the house without authority, either from the magistrate or the board of guardians?—Certainly not.

7188. You probably think that the magistrate would be the best judge?—I think so. People would not submit to such a power as that being left in the hands of the local inspector.

7189. You stated, did you not, that you thought it desirable that the upper waters of the Thames should be under the authority of the Thames Conservancy Board?—Yes.

7190. You doubtless had in mind that recommendation of the Rivers Pollution Commissioners in their report on the Thames, which contains these words: "We submit the following recommendations," and amongst them, "that the whole river be placed "under the superintendence of one governing body"?—Yes.

7191. In so much, then, as the present laws do not give power to the conservancy over the entire river there has been a falling short of the recommendations of the Rivers Pollution Commission?—Yes.

7192. I also wish to call your attention to this clause in their report: "In conclusion, we would respect- "fully call attention to the fact that this report does "not deal with the tributaries of the Thames. This "omission does not invalidate any of our suggestions, "and under the circumstances was unavoidable. Had "the delivery of our report been postponed till the "inquiry into the state of the tributaries had been "completed, it would have been too late to be of "service in any scheme providing for the immediate "necessities of the upper navigation." This omission, therefore, in the statute is again a falling short of what the Rivers Pollution Commission appeared to desire?—Yes.

7193. Referring to the Thames Navigation Act of 1866, in clause 63 I find it enacted, that "from and "after the passing of this Act it shall not be lawful "for any person to do any of the following things;" and amongst them is this: "To open into the Thames "any sewer, drain, pipe, or channel, with intent or "in order thereby to provide for the flow or passage "of sewage, or of any other offensive or injurious "matter," and other clauses to the same effect. And then I find by the 64th clause, "Whenever any sewage "or any other offensive or injurious matter is caused "or suffered to flow or pass into the Thames;" and then comes the words, "or is caused or suffered to "flow or pass into any river, stream, cut, dock, or "watercourse communicating with the Thames at any "point within three miles of the Thames, measured "in a direct line therefrom, in such manner that the "same is carried, or is likely to be carried, into the "Thames; then and in every such case, whether any "such sewage or other matter had or had not been so "caused or suffered to flow or pass before the passing "of this Act, the conservators, within a reasonable "time after knowledge of the fact, shall and they are "hereby required to give notice in writing, under "their common seal to the person or body causing or "suffering the same so to flow or pass, to the effect "that they require him or them to discontinue the "flow or passage thereof as aforesaid within a time "to be specified in the notice, not being in any case "less than 12 months or more than three years." It appears, then, to be clear that in the event of that occurring the conservancy board has no option whatever, but must give notice?—That is quite correct, and they do give notice; but if you will read on a little further you will observe that they have power to lengthen the period in some sort of way.

7194. With a power of discretion as to lengthening the period?—Yes.

7195. But in no case can that period be longer than three years, except there be an extension of time under the common seal of the conservators?—There is something more about an appeal to the Secretary of State.

7196. And then comes the power of appeal to the Board of Trade: "Provided always, that if any "person to whom such notice is given thinks him- "self aggrieved by reason of the time allowed, either "by the original or by any subsequent notice not "being sufficient to enable him to discontinue the "flow or passage of the sewage or other offensive or

"injurious matter," and so on, then he may appeal?—Yes, that is the clause under which they have been acting. Whether the second clause modifies the first one, or the first one binds the second, seems doubtful, but practically the latter clause has been held to give both the local board and the Thames Conservancy Board the power to give a longer period than three years.

7197. The offender may gain time with the consent of the Board of Trade?—Whether it has been done with the consent of the Board of Trade, I do not know, but it has been arranged through the Home Secretary.

7198. Do you know how the ventilation of the drains is effected, because I understand that the ventilation of the drains at Eton and Windsor is very unsatisfactory?— It was very unsatisfactory, and it is not right now; nothing like it.

7199. What steps have been taken to improve it?—They have been proceeding with the preparation of plans to change the whole system. Two persons who went into the main drain of one of the towns set fire to the foul air three times the other day, and therefore it is impossible that it could be right.

7200. Are they intending to improve the ventilation?—Yes; by means of shafts it will be conveyed out of the sewers and taken to chimneys.

7201. Are those shafts being constructed for the purpose?—They will be constructed for the purpose.

7202. (*Mr. Shaw.*) By the 64th clause the conservators have power to give a notice, not being less than 12 months, or more than three years, wholly irrespective of what follows: "Provided that the conservators may, if they think fit, at any time, and from time to time, extend the time specified in the notice by another notice in writing;" therefore it is quite clear, is it not, that they might give three years by the first notice, and extended it by a second, and then extend it again *toties quoties*?—Yes.

7203. (*Earl of Romney.*) You stated, did you not, that you thought that the conservancy board of the river Thames extended over too large an area?—The objection to the present constitution of the Thames Conservancy Board seems to be that the greater part of the members of it are all interested in matters very foreign to the interests of the upper part of the river. It would probably be an improvement if the whole river were put under one general board, as it ought to be, and the whole could be divided into two minor boards or two committees, so that people who were really concerned in the upper part of the river should deal with it, and the people who were concerned in the lower part of the river should deal with that.

7204. If each part is to act separately, what is the advantage in having them to any extent united?—It was sanctioned partly for financial reasons, because the upper conservancy had no funds, and it was partly from the fact that both had certain interests in common which ought to be considered.

7205. What interest have the people who care for the river between Woolwich and Gravesend, with regard to the river above Oxford?—It really turned upon the water supply, that the Thames Conservancy Board, as the guardians of the lower part of the river, were the people to make the financial arrangements with the water companies who supply London, and then of course they were the only people who could legitimately be the guardians of the purity of the river up above.

7206. Then the shipping interest is really called upon to provide the means whereby London is to be supplied from the upper part of the river Thames with fresh water?—In so far it has some interest in it.

7207. You stated that at Windsor you were taking steps at the present time to lower the water?—Yes.

7208. What sort of steps have you taken to lower the water at flood times?—Principally by enlarging the overflows, and making them entirely self-acting, and constructing alongside of the weirs large openings at a certain level, so that whenever the water rises above that level, it should pass away as rapidly as possible. Hitherto it has been too much the practice to pen it up and not give it vent at all except over the weir with all its obstructions of woodwork and eel pots, and arrangements of that kind. Of course it is desirable that it should be made better, and it can be largely improved; in fact it is being done as fast as possible.

7209. Did not they open the locks whenever the land water was coming down?—No. You could not open the locks at flood time.

7210. Did not they open them before the rush of water came down?—They might give a little temporary relief, but it is a perfect trifle anything that you could do through the lock gates.

7211. The difficulty of dealing with the water in the Thames in keeping it down is solely caused by the locks and dams that are put to keep the water up to a high level, is it not?—It is a great advantage to keep the water high in summer, or else it would become so shallow in many places that boating and all those sort of things could not be carried on; and the level of the river has been established so long now during the summer months at a certain height, and has been so for centuries, that the whole country is accommodated to it, and it would be attended with serious evils if the permanent level of the water in summer was lowered or much interfered with.

7212. Injurious to the mills and places of that sort, but not injurious to the land for the purpose of drainage?—I am not very sure that it would not, because as a general rule the lie of the water is about four or five feet deep underneath the immediately adjacent fields, that is to say, about from four to five feet from the surface in the summer, and if you were to lower that two or three feet more, it would probably be attended with injury to the vegetation; the pastures would be burned up more, and many trees in the Thames valley would die.

7213. In winter, instead of being about four feet below the level of the ground it is within 18 inches of the level of the ground, is it not?—It is over the surface for a short time in many places, and that of course is injurious, and it is desirable to remedy that as far as possible.

7214. And that would be a great obstruction, would it not, to draining the land for agricultural purposes?—That is the time when you want to give them relief, not in the summer when it is four feet deep at least from the surface.

7215. In winter time can you really hope to keep it so low as that which it generally does stand at, namely, four feet from the surface?—No arrangement will ever be able to do that absolutely, except by taking away the locks, and that would not do it, but it may be very much modified and much helped.

7216. What is the number of barges, on the average, that come up and down through the Windsor lock in a day?—Half a dozen a day, I suppose, or something like that. I do not know that there are so many sometimes, but the number of pleasure boats is great.

7217. Are the cottages in your neighbourhood about Windsor and Eton generally in good order or bad order?—You would find all specimens. In the neighbourhood of Ascot Heath, and in the outlying districts of Egham parish, you will find many as bad as there are in the whole kingdom. They have principally grown up as squatters, and they have been built upon little bits of freehold land allotted out of the commons.

7218. Do they pay pretty well as an investment?—Some of them must be paying 25 and 30 per cent. upon what they cost, judging by the rents that they are receiving, and from what they cost.

7219. They are probably bad in construction?—They are as bad as can be.

7220. Do you think it would pay to build decent cottages in that neighbourhood?—It is difficult to answer that question. It is, for instance, difficult for a gentleman building cottages on his estate to show how they pay. We know that he does do it,

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because he feels that it is a right thing to do, and he gets payment in some shape or another.

7221. What do you reckon you can build a pair of cottages for with three bedrooms, a kitchen, and a wash-house, and all the proper conveniences, and 9-inch brick walls?—They would not be very much under 300*l.*; but they would not all require to be of that size.

7222. What is the common rent paid by men in your neighbourhood?—A common labourer pays about 3*s.* a week.

7223. What amount of garden have they?—They vary; 15 poles of ground is the average for a cottager's garden.

7224. When you build tanks and trust to them for a supply of water, do you put filters to the tanks?—I have not in those houses I have last built; they are not necessary for cottages upon that scale. One must judge a little. If it was a place overhung by trees and frequented by birds, it probably would be necessary, but if you build the chimneys pretty high up over the roof, so that the smoke is not liable to be beaten down, you may dispense with filters.

7225. Is the water fit to drink without filtering?—It is not necessary to filter the whole. You may give them a small filter simply for what they drink.

7226. At what do you estimate the quantity of water that falls upon the superficial yard of roof?—There is no difficulty in calculating that; there are from 23 to 25 inches of rainfall in the year, and then, when you know the area of the building, there is no difficulty in calculating it.

7227. Do you build your tank in accordance with that?—As near as it can possibly be. We know exactly what falls, and practically get as near to that as possible.

7228. What do you allow per head per diem?—Five gallons per head per diem is the minimum that ought to be allowed.

7229. And in those cases where the tanks have been trusted to have they generally been sufficient for the purpose?—It is very seldom otherwise. In such years as 1864 and 1865 one or two supplies gave way, and once or twice last year for a very short time during the longest drought; but as a general rule one year with another you may take it with safety.

7230. In those cases have the tanks been made sufficiently large to store all the water that was likely to fall?—They were made as large as anyone could reasonably expect.

7231. (*Mr. Powell.*) I think you were a witness before the Rivers Pollution Commission when they were considering the Thames?—Yes, I was.

7232. And your opinions, both as evidence and also as published in the appendix, are to be found in their report?—Yes, I believe it is there.

The witness withdrew.

(57.) Henry Day, Esq. M.D., examined.

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7233. (*Chairman.*) Are you physician to the Stafford infirmary?—Yes.

7234. Can you give us some information relating to the local government of Stafford?—I am able to do so.

7235. How many districts are there under the local government of Stafford?—There is Stafford proper, and also the two districts of Newtown, now called "Castle Town," and Forebridge. The municipal borough is of course under the government of the municipal body, but not altogether so. There is a body of improvement commissioners, and these two bodies govern, so to speak, Stafford; they do not govern concurrently but separately, the municipal body governing one part, and the improvement commissioners another.

7236. By Stafford proper you mean the parliamentary borough; Newtown though in the parliamentary borough, is not in the municipal borough, and Forebridge is in both the parliamentary and the municipal borough?—That is the case.

7237. Stafford proper, that is the parliamentary borough, being governed by two bodies, the corporation and the improvement commissioners, how are the other two districts of Newtown and Forebridge governed?—Newtown is without government; Forebridge has been hitherto governed by the highway surveyor.

7238. Will you tell us how those two bodies, namely, the corporation and the improvement commissioners, divide their functions in the government of Stafford; do not they clash one with another?—The fact is that they continually do clash.

7239. Do they act separately?—They do.

7240. Is some part of the town under the one and some under the other?—Yes.

7241. Is there not great inconvenience in that state of things?—Very great.

7242. When you say that Forebridge is under the highway surveyor, has he practically all the local government powers?—Yes.

7243. Is the officer in that case the highway surveyor?—Yes.

7244. Is there such an officer now?—Practically not.

7245. Is the government of Newtown and Forebridge practically suspended?—Yes.

7246. How far do the ecclesiastical divisions of Stafford coincide with those municipal divisions?—They extend beyond the limits inasmuch as there are certain outlying townships, Hopton and Coton, and so forth, and those are under the control of the poor law guardians only.

7247. Can you tell us the extent both in area and population of the parliamentary borough of Stafford?—I cannot. I should say about 500 or 600 acres, but the entire acreage of Stafford is 6,373.

7248. When you talk of the entire area of the acreage which is 6,373, you mean the parliamentary borough of Stafford, Newtown, and Forebridge, and the outlying townships to which you have referred?—Yes.

7249. Can you state the population of that area?—The parliamentary borough is about 16,000, but the municipal borough is about 13,000, exclusive of any of the outlying townships.

7250. What rates are levied upon this area beyond the poor rate?—None but the improvement rate and a borough rate.

7251. Over what area are they levied?—That I do not know: in consequence of the division which I have just now referred to, the improvement rate does not at all touch either Forebridge or Newtown, except that there has been an improvement rate levied in Forebridge and Newtown by the highway surveyor.

7252. In the parliamentary borough of Stafford are the powers of local government vested in the corporation under the General Act or under a Local Act?—They have not adopted the General Act; they are simply under the Municipal Corporations Act.

7253. What are the powers of the Improvement Commissioners for local government purposes, and under what date?—I do not know the date of the Act. Their powers are for levying rates for repairing streets and roads, attending to nuisances, and so forth. They appoint an inspector of nuisances to whom they give a salary of 10*l.* a year, and he is a man who, at present, is librarian to the Mechanics' Institution; and the duty altogether is very inefficiently performed.

7254. How are the accounts of the corporation audited?—There is an auditor appointed who gets nothing, and there is an auditor of the Improvement Commissioners, and he gets, I believe, 10*l.* a year.

7255. Can you state what is the average mortality of Stafford?—There is some slight difference between the parliamentary and the municipal borough in that respect; the parliamentary borough would be about

23 per 1,000 per annum, and the municipal borough about 22 and a fraction; the average mortality throughout England being about 23 per 1,000.

7256. Is there any other inspector of nuisances besides the one that you have referred to?—There is a man of the name of Kelly, a policeman, who is appointed (I believe by the guardians) for Newtown, but what he gets a year I do not know.

7257. Is Stafford a poor law union?—Yes.

7258. In what union are those districts of Newtown and Forebridge and also the outlying townships?—In the Stafford union.

7259. Are there also agricultural districts in the same union?—Yes, there are agricultural districts also.

7260. How is the inspector of nuisances appointed?—The inspector of nuisances is appointed by the Improvement Commissioners.

7261. Is there any medical officer of health?—None.

7262. How is the county infirmary supported?—Entirely by voluntary contributions.

7263. In cases of infectious disorders or any epidemics in the town, what powers are there on the part of the local authorities to interfere?—None.

7264. Have cases arisen in which this want of power has been apparent?—Yes; some four or five years ago there was an epidemic of smallpox, and very great difficulty was encountered in consequence of the want of some provision of the kind to which you refer.

7265. Is there any inspection of food by either the police or the authorities?—Yes, by the police, and very effectually and efficiently, I believe, it is done.

7266. Is that under the orders of the local authorities?—Under the orders of the chief constable, I believe.

7267. Who is the coroner for the district?—Mr. Morgan; he is a solicitor.

7268. Did the poor law guardians make an attempt recently to prove the sanitary condition of your district?—They did.

7269. What was the result?—A failure.

7270. What was the cause of the failure?—Want of means.

7271. Will you state a little in detail what you refer to?—It was want of money; they had no means whatever of carrying out the idea which had occurred to them.

7272. What steps did they take?—The precise steps I am not aware of, but I think it was principally endeavoured to be done through the poor law medical officers.

7273. They have appointed no inspector of nuisances officially for themselves?—No.

7274. Could they do so, or is that power taken from them?—I am not aware whether they have the power, but I should conclude that they have not, or they would have exercised it.

7275. How is the registration of both diseases and death carried out in your district?—There is none whatever beyond the ordinary registration of births and deaths.

7276. Is that pretty effectually carried out?—As well as it is possible.

7277. Is there a published record of deaths?—No record excepting at the infirmary, the county asylum, the jail, and the union workhouse; the county asylum, I believe, publishes its record.

7278. When small-pox appeared four years ago to which you referred what steps were taken both for attendance and for the use of the infirmary?—When it occurred contagious diseases of all kinds had before then been admitted, and small-pox was admitted in such numbers that the infirmary had become a sort of hot-bed of disease, and the admission of such cases was obliged to be forbidden.

7279. I infer from your answer that it rather increased the disorder than alleviated it?—That was the supposed effect.

7280. Are cases of consumption and rheumatism prevalent?—Very prevalent indeed, and most preventable.

7281. To what do you attribute that prevalence?—Consumption, partly to the trade of shoemaking, but not altogether, and partly to the dampness of the soil.

7282. Is not that dampness occasioned by a great deal of water being dammed up for mill purposes?—It is so, and I may add to that, that sometime ago the removal of those mill-dams was in contemplation: a railway was about to be made between Stafford and Market Drayton, and several landowners in the neighbourhood were anxious to have those mill-dams removed: they subscribed a considerable sum of money upon the undertaking of the railway authorities, or the intended railway authorities, that they would provide the remainder. The railway was abandoned, but the money subscribed by the landowners is now lying in the bank; the amount I do not know.

7283. Can you tell us generally what is the drainage of Stafford?—As bad as it is possible to be.

7284. Will you describe the nature of its badness?—It is altogether surface drainage, and it is not an uncommon thing to see excrement floating down the gutters of the street in the daytime.

7285. May that drainage be perceived by an absolute malaria in certain places?—The air is so offensive that it is notorious. I may say in fact that the place is continually in bad odour.

7286. How can you reconcile such a statement with the fact that the rate of mortality is not above the average of the whole kingdom?—It must be borne in mind that there are places in England where the average mortality is not more than 16 or 17 per 1,000, though there are other places where the average is 36, or more, and although 23 per 1,000 may be the average of the whole country I do not look upon the average mortality as being small by any means, inasmuch as the Registrar General has said that all mortality exceeding 16 or 17 in the 1,000 arises from preventable causes, so that although the mortality appears to be low, there can be no doubt whatever that with proper sanitary arrangements it would be infinitely less.

7287. You stated that the drainage was so bad that actually excrement may be seen floating down the gutter; is there any attempt at systematic drainage?—None whatever.

7288. I need not ask whether there has been any attempt at the utilization of the sewage?—None whatever.

7289. In fact the sewage according to your account escapes as it can?—Yes, as it can, and where it can. A good deal of it finds its way into the river Sow, and there is a drain which is sometimes called the commissioners drain, it escapes into that drain occasionally, and from thence into the river Sow.

7290. What commissioners drain do you refer to?—The improvement commissioners, I suppose.

7291. Is that on the improvement principle?—No. Perhaps I may be allowed to add that there are two places in Stafford, the two lunatic asylums, where the utilization of sewage has been carried out, and with the very best possible effects—that is to say, land rented or belonging to those institutions has been rendered particularly fertile without there being any ill effects at all from the use of it, by spreading it over the land, and so on.

7292. I suppose you think that the Stafford people might make the same use of their sewage?—I have no doubt whatever that in a town with the population of Stafford they might make use of it in the same way.

7293. What is the water supply of Stafford?—That is as bad as the drainage.

7294. What does that arise from?—The receptacles of filth belonging to many of the houses are in immediate connexion almost with the water supply which is obtained from the wells, so that in more than one instance the urine, mixed with fœcal matter, has been seen trickling down the sides of wells, and you may say that the people living in one house drink the water that is made at the other.

7295. Is there any control exercised by the local authorities over the construction of houses?—None whatever.

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7296. Can you suggest any mode by which the local authorities or the law might be altered so as to bring about a better condition of things in Stafford?—I believe that there is a general wish felt by the most respectable inhabitants in Stafford, for the compulsory adoption of the Local Government Act, but it is also thought that it would not do to have it permissive in its character, as from the constitution of the municipal body, there are several of the members who are excessively obstructive in every way that they possibly can be, and there would, consequently, always be bickering and quarrelling at any suggestion that might be made: they would obstruct, as far as they could, the Act if it were made permissive, but if it were made compulsory that would set the whole matter at rest, and I am sure the whole neighbourhood would benefit by it.

7297. I understand you to say that the town ought to be made to adopt the Act not by voluntary application, but by compulsion?—That is my opinion.

7298. Supposing that was done, how would you propose a simplification of the authorities which seem so very complicated in Stafford?—I think it very desirable that those two districts which I have already mentioned, Forebridge and Newtown, should be united with Stafford; but I think it would be as well perhaps that those districts should have some little opportunity afforded them of considering whether they would be united with Stafford in the whole matter.

7299. Supposing they were so united, what should be the body which should govern the whole?—I think if it were possible the whole of it should be under the body coporate.

7300. If the public Act were adopted as you seem to wish, it would in fact place all those districts under the local government of the town council?—Yes.

7301. Do you think that would be satisfactory?—That is my impression. I may add that an attempt was made to bring Forebridge and Newtown under the Local Government Act, but it failed because the population was not sufficient.

7302. (*Mr. Powell.*) As an independent board?—Yes, it was as an independent board; and as they wished to adopt the Local Government Act for themselves, I conclude that if the municipal borough had the Local Goverument Act, those two districts would be only too glad to be united with it.

7303. (*Chairman.*) Was there an attempt made in the year 1864 to get the Local Government Act adopted in Stafford?—There was.

7304. How did it fail?—It failed in consequence of the obstructiveness of certain individuals on the council, who objected to it on the score of its entailing expense, forgetting, in my opinion that as the poor are always the most numerous, so is disease, from a variety of causes, most frequent amongst them; and that disease with the poor or the working men means poverty, poverty means the workhouse, and the workhouse means poor rates; therefore I believe that the saving which would be effected in the poor rates would more than counterbalance any expense which might be incurred in carrying out the Local Government Act.

7305. Do you believe that a better sanitary condition would give more vigour to the people?—Yes, and so save not only health but money.

7306. Has any attempt been made to establish a system of drainage?—None whatever that I have ever heard of.

7307. (*Sir T. Watson.*) Have you much epidemic disease in Stafford?—No; occasionally we have scarlet fever prevailing, and sometimes a low form of continued fever in a certain portion of the town.

7308. Have you typhus fever?—Typhus rarely; typhoid more frequently.

7309. It is a crowded place, is it not?—In my opinion the fever arises rather from the poverty and the abominable construction of the working people's houses than from their being overcrowded. I heard a reference made in this room to the character of some of the houses in which country cottagers live, and I am prepared to say that in some portions of the back walls of Stafford, there can be found houses that would bear comparison with the worst that could be found in any agricultural district, in fact infinitely worse.

7310. Then you do not find that dirt and stench and poor living generate typhus fever?—No, or at any rate it does not appear to have done so there; the admission of a case of typhus fever into the infirmary, I might say, is almost a rare occurrence, but typhoid we are continually having.

7311. Is there any use of earthclosets?—None whatever, excepting by a friend of mine, Captain Salt, one of our parliamentary members, at his own house; but there has been no other trial made that I have heard of.

7312. The river Sow is, I suppose, a very dirty river?—Yes, it is dirty, and it is unnecessarily so from what runs into it; it is not naturally so. The Penk and the Sow unite a little below Stafford, and run into the Trent.

7313. Do you think that the registration of diseases could be effected easily by public institutions, hospitals, nfirmaries, and so on?—I have always been under the impression myself that there is available at a very small outlay a most efficient and extensive registration of disease, that is, through the medium of the poor law medical officers throughout the country. I think a much more complete machinery or a more perfect registration of disease it is impossible to imagine.

7314. Is it not clear that the registration of disease would be much more useful in respect to ascertaining the causes of disease and so preventing it, than the mere registration of death?—Decidedly that is the proper object and the logical inference is that if you know where diseases prevail, you will be able to deal most readily with the commencement of them, and so have the means of preventing them.

7315. You think that a return, such as you have alluded to just now would be a sufficient index of the presence of disease in the general community?—I can conceive of no better plan, certainly none that would be attended with so little expense. Of course the gentlemen who are poor law medical officers would require some additional remuneration, but looking at all the features of the thing I think it is quite clear that there can be no such means scarcely which would give you such an effective registration of disease.

7316. Are you conversant with the existing enactments which relate to public health?—I cannot say that I am.

7317. (*Mr. Paget.*) You have said that you think you could not have a better arrangement than for the poor law medical officers to be registrars of disease, but they could register diseases of none but the pauper class?—That is true.

7318. In Stafford are there not a very large number of persons above the pauper class who are attended by medical men such as the members of clubs?—Yes.

7319. Do you think that it would be possible to attempt any registration of the diseases of the working classes who were members of clubs being attended by medical men?—Yes, that might be brought as an addition to the other.

7320. Do you think it would be important as giving a still better index to the health of the people than the registration of diseases of the pauper classes alone?—Being an addition to it it could not fail, "pro tanto," to be a serviceable addition. You have referred to the patients being paupers, but perhaps you did not at the moment remember than many of the poor people who are paupers have been working labouring men prior to being paupers.

7321. Doubtless many of them have been, but it would be important to know the amount of disease prevalent in the working class?—Yes, it would and it very possibly might be accomplished by such means as you suggest; and, if found practicable, it would very materially add to the means of registration which I have suggested.

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7322. Is it the custom in Stafford for many masters to employ a medical man to attend their workman under one building?—No.

7323. You spoke of the registration of deaths in Stafford as being done as well as possible, I suppose you mean under the circumstances of Stafford?—Yes.

7324. Not as being absolutely well done?—No, I meant to say as well as circumstances permitted of its being done.

7325. Not as a model registration?—No certainly not, very far from it.

7326. Have you ever had any severe epidemic of cholera in Stafford?—I have never known a thing of the kind myself, and I have been informed that there has never been a case of what is called Asiatic cholera in Stafford, although within 15 miles, the town of Newcastle some years back, but particularly in 1832, was frightfully attacked with it.

7327. Can you state the circumstances which would render Newcastle, more likely to be attacked with cholera than Stafford is?—I cannot.

7328. Is the condition of Stafford such as would make it likely to happen there?—I cannot make out why it has not happened; I have tested the atmosphere for ozone, and this I did by placing an ozone box several consecutive nights on the lamp-posts in the principal street, where I have myself seen ordure passing down the gutter, and I got no indication whatever of the presence of ozone. I did that for three or four nights. I may further mention that there are a number of slaughter-houses in Stafford, and the practice in those slaughter-houses of keeping pigs for the purpose of consuming the offal is most objectionable and most offensive. I may also mention that we have four or five cattle fairs in the course of the year; the animals are all turned loose in the principal streets, and it is not fit for any person to pass down the street during the day; the whole place is covered with cowdung and mess of a most abominable description, this being trodden all over the place. There are no public slaughter-houses; the butchers' market is held in the open street outside the shire hall; and altogether the condition of Stafford is about as lamentable as anyone could imagine the condition of any place to be.

7329. Did you ever hear of a case of cholera coming by chance, or in any other way into Stafford?—I never have been able to learn that there was any well-authenticated case of that description of cholera to which you refer.

7330. Therefore Stafford has never been subject to the test of the introduction of a case of cholera for ascertaining whether it would spread?—No, precisely so; if it got there nobody could say what would become of it.

7331. (*Mr. Shaw.*) When you speak of typhoid fever, you do not mean as the etymology would suggest, a species of typhus, but a distinct class of fever of an enteric nature?—What is generally believed and admitted to be a perfectly distinct affection—it is what is called enteric fever.

7332. You spoke of the utilization of sewage in two large institutions; what were the institutions to which you referred?—The two lunatic asylums. In the county lunatic asylum, which I believe has some 800 or 900 lunatics, and in the other, the Coton Hill asylum, which is supported partly by voluntary contributions, and which I suppose may have some 300 or 400 lunatics in it, they have made a successful attempt at utilizing the sewage; it has been most serviceable, and they get immense crops on the land adjoining those institutions which they farm.

7333. At what distance is the irrigation by sewage from the building?—The area over which they spread their sewage I do not know, but it is close upon the institution.

7334. It has never been found to produce any ill effects upon the health of the inmates?—No; I believe those institutions have always been free from epidemics of any kind. I think it is rather a notorious fact that a lunatic asylum is seldom visited with an epidemic. It may be in consequence of the careful sanitary arrangements or precautions that are generally taken; it ought to be, and I believe it to be, the fact.

7335. (*Mr. Powell.*) Several of the grievances which you have described to the Commission in such graphic terms are certainly within the provisions of the Nuisances Removal Act?—Yes.

7336. Can you account for the fact that the authorities have been so culpably inert?—I think that may be partly in this way, *i.e.*, from the character of the person who has been appointed inspector of nuisances. He has his friends, and he is reluctant to find fault and fearful of offending; and even when the occurrence of a nuisance is brought before the authorities, if the party or parties be summoned before the mayor, the chief magistrate, if he has the power, and I believe he has the power, of inflicting some small fine, he finds himself very much in this condition—if he say that he will not permit such and such a nuisance in the streets or elsewhere, the reply is. "What am to do with it?"

7337. Are you speaking of a case which might occur, or are you describing the proceedings which have actually occured before the magistrates?—Both.

7338. Has any communication taken place with the Home Office, under the Sanitary Act of 1856 to remedy this state of things?—I believe not.

7339. From your knowledge of the habits and feelings of the people of Stafford, do you think that supposing the laws were to be made effective, resistance to those laws would be increased or not if the inspector of nuisances were a policeman?—I do not think that would operate in the way you seem to infer, that is to say, that there would be an objection. I think he would be a very proper man, in the first instance, to inspect, to find fault, and to give notice.

7340. (*Chairman*). Supposing we were to get a compulsory Act by which the Local Government Act should be adopted in Stafford, so that the whole of the local government would be put into the hands of the town council, how should we get rid of the Improvement Commissioners Act?—I should imagine that some lawyer would be best able to answer that question.

7341. Do you think that there would be much local opposition to its repeal in order to get it out of the way of such a general provision?—Whatever may be done for the purpose of rendering Stafford sweet and clean and more healthy, if it is done by the authority I just now spoke of, I think there would be little, if any, opposition to it.

The witness withdrew.

(58.) George Darby, Esq., examined.

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7342. (*Chairman.*) You are the principal Inclosure Commissioner, I believe?—I am one of the commissioners.

7343. I think you have given your attention a good deal to sanitary matters, and are particularly acquainted with them in rural districts?—Not as an Inclosure Commissioner; it is more from my connexion with the country in my own parish, and with the board of guardians, and knowing that part of Sussex very intimately.

7344. In those places with which you are best acquainted, will you state to the Commission generally what steps are taken in the rural districts to carry out sanitary regulations?—I am afraid I must tell the Commission that they must depend rather upon my practical knowledge than upon my intimate acquaintance with the Act of Parliament. I have not had an opportunity of looking closely into the law, but I know how it works. For instance, in our own union of Hailsham, two of the relieving officers are appointed

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as inspectors, and practically their inspection, I must say, amounts to nothing, but my own idea is, that this arises from two causes. In the first place, those inspectors go about and interfere with things which people know ought not to be interfered with, and the consequence is that they get into disrepute, and things which ought to be interfered with consequently are left undone. My notion is this, (and I think I am correct,) that you ought to do something to carry the public mind and men of common sense with you in order to insure acquiescence instead of resistance. Whatever authority you use, I should in the first instance have a report, either from the medical man of the union or some one who should be obliged to report, that in such and such a spot, or in such a set of cottages, there is more disease than there ought to be, comparatively speaking. The moment that fact is established you should have an inquiry, and the public then must go with you; I am quite sure of that. If you have a set of wretched cottages where fever exists and the medical man reports that in such a place in such a parish there is fever, and there was fever also in such a year, and at such a time, that would be a foundation for inquiry; and if you prove to the public that such things exist, you will at once have an acquiescence in their being remedied; I feel quite sure of that.

7345. In the first place, what prevents the present inspectors from making such reports?—There is nothing that would prevent them; but what can you expect from two relieving officers who go about from parish to parish just saying without knowing, "There "is disease on this side and disease on that," and saying, "Here is a pigstye which must be taken down;" although, perhaps, it has been there for 50 years or more, and it is one of the healthiest parts of the parish. The consequence is that everybody knows that it is the most healthy part of the parish, and they suspect the man's competency immediately.

7346. You say that in the district that you refer to the inspectors are generally the relieving officers, can anybody be so cognizant as relieving officers of the places where fever exists?—They may know where fever exists, but in point of fact I speak practically of what the result is to my own knowledge. There is no discretion shown by them at all.

7347. Do you believe that that is because the relieving officers are as a class of men not sufficiently independent, and therefore afraid to report?—No. At any rate I do not think they report with discretion, and then what I was going to say was this: the moment that you got an inquiry, and you knew from that inquiry that there were remedies wanting, I think there should be a distinct and positive authority to carry out the particular remedy, because I believe if you had not that authority the local influences would prevent that remedy being carried out.

7348. But before we come to the point as to carrying out the remedy, I should like to hear a little more about first setting the authority in motion. Supposing the relieving officers, being used as inspectors, are not sufficiently independent to give information of the existence of nuisances, would medical officers be more independent; would they not, just as much as the relieving officers, be so completely the servants of the guardians as to be afraid to report any cases in which the guardians themselves were committing a nuisance?—If a medical man found out that in a particular part of a parish fever settled, or anything of that kind, I do not think that he would dare risk his reputation to state that it did not exist, and then you would have some means of making an inquiry into it; and I think that might very easily be done.

7349. You think that the medical officer would be more likely to report than the relieving officer as an inspector?—I do; and I think that he would know more about it. A relieving officer does not go to every cottage all over a parish, though he may have to see individuals. What the relieving officer does is this, supposing he has certain things to distribute in the parish, he goes there, and the flour, or whatever it is, is brought to that place, and he distributes it there; whereas in point of fact the medical man is necessarily over every part of the parish, and if disease exists he must be there because he is called in.

7350. Is not some of the relief which the relieving officer has to distribute sure to be given in those localities where fever exists?—No, they are constantly relieving. They go to one or two places where a man has out-door relief, but, as a rule, the relieving officer goes to a particular spot where the poor people come to receive their relief.

7351. Therefore, supposing your first recommendation carried out, namely, that the poor law medical officers should be the persons responsible for reporting nuisances, what would be the next recommendation that you would make for carrying out the remedy after such report was made?—I would make it compulsory, if it was a case of importance, to have an inquiry, and that inquiry would show first of all whether the medical officer was right or wrong, and you would get really at the truth of the state of the locality, which you never do now.

7352. What body do you think would be the best local authority in rural districts?—It is, of course, a very open question. There are various authorities which people considered to be the best; but I cannot help thinking that, taking it altogether, the board of guardians would be as good an authority as any other, and I will give my reason for it. It is perfectly true that, supposing in my parish any disease existed, a particular guardian might be interested to suppress it or not. But, on the other hand, if it is reported to the board by the medical officer of the union, from what I have been in the habit of seeing, and I have attended a board of guardians very much, from my own knowledge, if such a case was made manifest to the board of guardians, I cannot but believe the body would naturally act to get the mischief repressed. I daresay there might be one or two guardians that might object for the reason I have stated. If the medical officer did not report, it would be another question what ultimate appeal you should have; but I am assuming that they did their duty, and that the medical officer reporting to the board of guardians, the board of guardians would be the persons representing the parishes over which that medical officer would have a supervision and be obliged to report.

7353. Would not the medical officer very often have to report against his employers?—No, I think not.

7354. He is an officer of the board of guardians, paid by them and subject to their dismissal; would he be a very good man to report against, perhaps, his own employers, with regard to nuisances on their premises?—I think there are plenty of persons who would be found who are in contact with the medical officer in parishes, who, if there was anything of the kind existing, would say, "You have not done so and so; "do not you know that fever is prevalent in such "a place?" I should do so myself. If a fever existed in my parish I should say to the medical man, "Here "is this fever existing, have you represented this to "the board? Are you at all aware, or have you "formed any opinion yourself as to the cause of it?"

7355. Do you not think that the board of guardians would be a good authority, not only for removing nuisances but for other purposes of local government, such as drainage, water supply, and all the various purposes of local government?—As regards the water supply in a rural district, that may enter into a very large question, because, perhaps, I might take the liberty of asking the right honorable gentleman what he includes in a water supply.

7356. My question includes all purposes of local government, as, for instance, not only the drainage and the removal of such nuisances as you have been referring to, but seeing that the people were not injuring their health by drinking from polluted wells, and had not their health injured by over-crowded dwellings; for all purposes of that sort do you think that the board of guardians would be a good body?—I think this, that if the board of guardians had distinctly and positively the responsibility thrown upon them, as far

as I know they would be a body which would, if I may use the expression, cover the ground that they have to deal with, and if you have an elected body for a particular purpose, from what I have seen of it, I very much doubt whether there would ever be any concurrence which would lead to the removal of nuisances. For instance, take many towns under the Local Government Act where the local board are elected, you find immediately that it is nothing but one contest from beginning to end, and nothing is done in consequence and nothing arrived at. I do not think that that would happen in a board of guardians, because the election of a board of guardians is not, you see, like the election of a local board in a place. The election of the board of guardians is by each parish electing their own guardian; it is not like a local board. For instance, take the Eastbourne Local Board, the election is a matter of contest, like a contested election, where there is a party spirit, whereas there is no party spirit in rural districts with reference to boards of guardians. Parish A elects its guardian, and parish B elects its guardian, and therefore there is no party conflict which prevents them as a body looking impartially at the thing.

7357. Do you think that, supposing the board of guardians was made the local authority for all local government purposes, they should be specially elected for that purpose?—No; that is just what I would not have them.

7358. You would take the board as it is, and give them those additional functions?—Yes. I think if you elect them specially for that purpose, and so have an election of a board of guardians for that purpose, you would cause the mischief which I think I see in the machinery of the local boards constantly—namely, that it is a sort of party election and a trial of strength; and then there is not, I consider, that action which there ought to be to carry out useful purposes and combined action.

7359. Are you aware that local boards of health for towns may under the Act of 1858 be divided into wards, and so be constituted in a similar manner to the election of boards of guardians in the country?—If that be so, still I think I know several local governments which are not divided into wards. If you can bring a thing exactly parallel to the boards of guardians to prevent that conflict, of course my answer would not apply; but as far as I know of the few local governments that I am acquainted with, they are not divided into wards, and I know that they often have very great conflicts. I do not say who is right or who is wrong; but I will take Eastbourne, for instance. There is a great war there with regard to the ventilation of the sewers. One person says there ought to be charcoal over the existing openings, and another person says that chimneys ought to be constructed so as to carry the effluvia through those high chimneys higher than the houses. There is a constant conflict, and that is a sort of conflict which I do not think is ever likely to lead to satisfactory results in sanitary measures.

7360. You think that there would not be that conflict usually in rural districts, because the representatives of the different parties would all see after each other?—I do not; and I think another thing, particularly inasmuch as there are *ex-officio* guardians, and, as far as my experience goes, the guardians always wish them to attend, and therefore they would have the advice of the *ex-officio* guardians, and therefore those who would wish to stop those sanitary measures would have no power in the common run of boards of guardians.

7361. Do you think that the board of guardians, as the local authority, would require more control from the Local Government Act Office in London than they have at present to set them in motion, and to check them in their action?—I think that there ought to be some power, and if the board of guardians have not the power where there really is an evil positively to enforce the remedies, I think directly the evil is discovered a remedy is required somewhere or another, and there ought to be a power positively against all local influence to enforce it, or else it is useless.

7362. Can you from your experience give us an opinion whether such power now exists sufficiently in the Local Government Act Office?—As long as the controversy goes on, and they are not decided amongst themselves as to what ought to be done, it is very difficult to enforce anything; and there is the difficulty.

7363. Do you mean from public opinion not being settled as to what is the best way of remedying the evils?—Yes, because here is a controversy, and each party has his own idea, and therefore unless the thing is settled, and they agree together as to what ought to be done, it is very difficult of course to enforce remedies, because if you want to enforce a remedy, the party who is against what you are going to do would not be inclined to enforce a remedy which he thought was not one.

7364. Have you ever considered the proposition of an intermediate body between the Local Government Act Office and the local authority, such as it has been suggested might be made out of the quarter sessions, as, for instance, the county financial boards which are now proposed, if constituted?—If I understand it, the financial boards are to act together with a certain number of justices. These questions require consideration; but, supposing the board of guardians is the local authority, I should be much more inclined myself, by way of appeal, not to have it from the guardians to the financial board, who are composed in a great degree of guardians, according to this Act in a certain proportion, but I would have it from the board of guardians to the justices in quarter sessions, or petty sessions, or something of that kind. Then, I think, you would have a more proper court of appeal from the board of guardians, and more distinct from them.

7365. Would not they be almost as much the same body, because the magistrates on the petty sessional bench would be *ex-officio* guardians?—Yes; but they do not take the same place as the board of guardians. For instance, on the board of guardians, I should say that nine times out of ten the *ex-officio* guardians do not attend the board, I believe. I attend if there is anything particular going on, oftener than anybody else, but I do not suppose that you would ever have more than two magistrates at the board of guardians with us.

7366. You seem decidedly of opinion that the board of guardians would be the best local authority in rural districts. Have you considered the highway boards under the new Act, as far as they exist?—You have very large areas; the areas are very uncertain, and the persons appointed have not certainly the knowledge of parishes that the board of guardians have. Of course I am speaking in a certain measure off-hand, but I cannot help thinking that the board of guardians would be a more effective body than the highway boards.

7367. The Sanitary Acts at present give many functions of local government to the vestries. Do you consider that those functions would be better performed by the board of guardians?—I am most decidedly against the vestry having it. I would not let the vestry have it, and that is the reason why I thought of the board of guardians. If you go to the vestry of course there may be two or three large owners in the vestry, and if it affected their interests they would stop it. You must know that they have very great power in the vestry. You could easily stop a thing in the vestry. I do not think a vestry is necessary, you want to have a larger area. Supposing we had seven or eight parishes, and you have a question arising in parish A, you have six parishes that are not influenced by the people in parish A; but if you have a vestry, it is the vestry of the particular parish where a particular interest may be predominant, and that is what you do not want. The reason I think is this; for instance, in my own district our medical men have said that within a certain area fever will not live, and that almost any case of fever that comes into our parish recovers. I have known a family get well and go out again, and catch a fever again and come back;

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and recover; and yet I know in one case, from some particular reason or other, there were two cottages in which there were one or two cases of fever which did not extend. In that case, supposing that you had an inquiry, and it had been reported that fever existed in such and such cottages, (and certainly if I had the means I should have instituted an inquiry myself,) when you had established the fact that fever does exist there, and never existed there before, I am perfectly certain that by the common assent of the parish and the board of guardians the matter would be followed up, and when that is followed up there ought to be some means of applying a remedy, and I say that there should be some authority, wherever it is, to put the thing in motion immediately; but that is what does not exist now at all.

7368. (*Mr. Shaw.*) If you act only upon the report of the poor law medical officers you would only get cases of fever occurring amongst the pauper class?—That is not quite so, because the medical man in the parish, unless they send, for instance to Brighton or somewhere else, for a physician, is the attendant of almost all the families in the district.

7369. You could not make it his duty as medical officer, could you, to report except as to cases occurring in the pauper class?—If you are reporting that John Thomas had typhus fever, or somebody else had scarlet fever, the honorable member will be quite right, I think; but I should not do it in that way. The medical man would say, "Here is fever existing in such a locality;" of course I am not entering into details, but I would allow anybody to call upon the medical man to do that.

7370. But how can you ensure his reporting anything excepting those cases which he visited in which he was the servant of the board of guardians, as the poor law medical officer; how could you compel him to report his own private practice?—If you pass an Act of Parliament you can compel a man to do that just as much as you can compel a relieving officer or anybody else. If it is not thought that the medical man is the proper man to do it, then find somebody else; but my idea is this, that if you mean to carry the public with you, (and that is what I want to do,) I would first show by some means, whatever means the Commission or Parliament can devise, that disease existed. I would have some means of its being made known as a fact that there was disease, because if people go where there is no disease, (I have heard it said over and over again in our own healthy parish,) and required things to be done which really tend to make matters worse which were healthy before, it is no wonder that no action is taken. I am not prejudiced as to any particular man, but I am certain that if you had it reported by somebody that disease was in existence in a particular locality people would be ashamed then to prevent a remedy being found out; that I am confident of. In my own place I know that they came round and required cesspools to the privies. The consequence was that those cesspools were not open perhaps till 12 months, and they cause stench I believe ten times worse than before; the place is so healthy that it did not produce any disease, but upon our old plan of having them with a laurel round them and open, and throwing earth upon them, there never was any smell at all; but when cesspools are opened at particular times it is a thousand times worse than the old system. Therefore, I say that these matters want judgment. As to earth closets, I saw in a *prècis* of the evidence which has been given before the Commission that they are a failure. It has been reported to the Inclosure Commissioners that they answer remarkably well, and I can easily believe that, as a watercloset, in perfect order, is without any smell at all, until it gets out of order and there is a stoppage, so with respect to earth closets, when persons are forced to attend properly to them, so long they answer their purpose. I believe that nothing can be better. I know that throwing earth upon any offensive matter, as far as my experience went, when we had the cattle plague, is the best thing that can possibly be devised. Therefore, all these things, I think, require a very experienced man, and not a man taking up a particular theory of his own. That was one of the orders in our own parish; they would have those cesspools; when these cesspools are opened at the end of a given period, the smell is horrible from them; whereas before you never found any smell there at all.

7371. Do you think it would be advisable to conjoin with the guardians any persons who might be appointed *ex-officio* guardians, or in any way appointed as guardians for sanitary purposes only, the object being to get a class of persons who would take particular interest in sanitary matters, and whose advice might be particularly valuable?—I am to understand that they would be only a board of guardians so far as sanitary purposes are concerned. I think that is very well worthy of consideration. I do not see why it should not act very well. Then the question is of course, who would be appointed; but I must apologize to the Commission, because this really is a question which has only just now come under my own observation; if I had been aware of it before, I would have looked much more closely into the matter than I have had an opportunity of doing. My strong conviction is, that whichever view you take of it, I do not say that I am necessarily right in this off-hand notion, but I am sure I am right in principle, that you should take means by some body or another of proving the existence of the evil, and then I am sure you would have the public go with you, and have that evil remedied; and then when you had proved the existence of the evil, and had held an inquiry, then I say, have power to carry it out; but do not have a man going here and there complaining of things which are not a ground of complaint, and setting the whole public against you, as I know is done in every rural district.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 22nd July 1869.

PRESENT:

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

The EARL of ROMNEY.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
JOHN ROBINSON McCLEAN, Esq., M.P., F.R.S.
EVAN MATTHEW RICHARDS, Esq., M.P.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

(59.) EVAN MATTHEW RICHARDS, Esq., M.P., a member of the Commission, examined.

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7372. (*Chairman.*) You are member of Parliament for Cardiganshire, and also a member of this Commission?—Yes.

7373. Have you taken an active part in conducting sanitary matters for some years in Swansea?—I have.

7374. Can you give us the area and population of Swansea?—The area is 4,363 acres, and the population is about 60,000.

7375. Have large sanitary works been carried on in Swansea?—Very large. Perhaps there is no town in England or Wales where sanitary works have been more fully carried out than at Swansea.

7376. Is there a good and constant water supply?—There is. The water supply has been made very perfect in Swansea. We have constant pressure day and night, and water taken into nearly every individual cottage in the town.

7377. What is the local authority of Swansea?—The municipal corporation as the local board of health having adopted the Act.

7378. Have they made this water supply?—Yes.

7379. Upon what principle is the drainage carried out?—Main sewers, and the system known as the back drainage; pipes at the backs of the houses, and sewers in the streets; the larger sewers being egg-shaped, about 3 feet by 2 feet 3, and the discharge is at the mouth of the river near the sea.

7380. Has that been done by the local authority?—Yes.

7381. Has the cost been great?—The cost has been very large.

7382. Have complaints been made of the heavy rates in consequence?—Yes, very great complaints; for many years the inhabitants were very dissatisfied on account of the large expenditure which had been necessarily incurred for water supply and sewerage, but the last two years of drought have made them all satisfied with the expenditure I think.

7383. How has the money been obtained for both those works?—Nearly the whole from the Public Works Loan Commissioners, while the works have been carried out from 1857 to the present time.

7384. Can you state the amount which has been borrowed from the Loan Commissioners?—100,000*l.* and upwards.

7385. Is the interest five per cent.?—The interest is five per cent., and a portion of the money was borrowed repayable in 20 years, but upon representations to the Treasury, the Public Works Loan Commissioners having also been applied to, they extended the period of repayment from 20 to 30 years; I may say that the authorities in Swansea have upon more than one occasion memorialised the Treasury to obtain an extension to 50 years for repayment.

7386. Is there power to do so?—There is no power.

7387. Has there been any improvement in the health of the town since those sanitary works have been executed?—A very marked improvement.

7388. Can you state the actual rate of mortality?—There was no accurate return of the rate of mortality until two or three years ago, but the rate of mortality for last year and the previous year was something like 18 per 1,000, which is very much under the average of the country. We feel that if the death returns were made co-extensive with the districts of the local boards of health it would be a great advantage, instead of as at present co-extensive with unions. The subject has been already referred to in this Commission.

7389. Is there a regular report made upon it by the officer of health?—Yes; the officer of health reports to a committee which meets weekly as to the amount of death and the state of the health of the district.

7390. What do the board do with those reports?—The reports are read at their ordinary meetings, but if anything special occurs, whereby the board think it necessary that the attention of the inhabitants should be called to the medical officer's report, they do so by public handbills. There was a case that met my attention when I was down in Swansea a fortnight ago, where copies of the medical officer's report upon scarlatina had been made public, and the attention of the inhabitants called to the necessity of certain things being done to prevent the spread of scarlatina.

7391. Do the inspectors of nuisances work under the direction of this medical officer?—They do.

7392. Are they appointed by the board?—The inspectors of nuisances are appointed by the local board of health, but since 1866 the three inspectors of the borough police have been appointed the inspectors of nuisances, and the work has been done most efficiently. I do not mean to say that it was not done efficiently before, but that it has been done most efficiently since the appointment of the inspectors of police.

7393. Is that a county or a borough force?—A borough force. I may state that the board thought it right to appoint an inspector rather than an ordinary policeman, and it has been found to act well.

7394. What is the plan of drainage as to the privies?—The large majority of the privies have been converted into waterclosets, even in the poorer parts of the town.

7395. Does that seem to work satisfactorily?—Yes, I think most satisfactorily. There is a large first cost in converting privies into waterclosets, and putting in the necessary supply of water; but I believe that the result has proved the truth of the principle which has been laid down by a member of this Commission, that water is the cheapest carrier. Some years ago, when I was a member of the local board, I had a return made by the inspector of nuisances, and by other officers, showing the cost of emptying cesspools, and making every allowance for the cost of the conversion of privies into closets, and the cost of introducing a water supply, it was found cheaper to adopt the watercloset and water, than to empty them in the old way. I need not say that that was looking upon it as a question merely of pounds, shillings, and pence, irrespective of cleanliness and comfort to the inhabitants.

7396. Entering into the merits of the system, you would probably not say that water, although the best carrier, is the best applier of sewage?—As far as Swansea is concerned I think it is. We have no difficulty in discharging into the sea. There is no nuisance created. There is a large outward current, and so far as Swansea is concerned I think that we have adopted the right system.

7397. Water is the best carrier where the simple object is riddance, irrespective of any value of that which is got rid of?—Precisely so.

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7398. How is the water supplied to the cottages?—The water supply is taken into every cottage.

7399. Is there a waste of water with this system?—A very great waste, but recently a new form of cistern has been introduced, and great expectations of success were held out when they were fixed, and I believe those expectations have been to a considerable extent realized. There is a double valve in the cistern, whereby the inlet is shut whilst the discharge is open. That obviates the loss which occurs by the handle being lifted and fixed with a piece of stick, as is ordinarily done in closets in poor localities, because after the cistern is emptied no more water comes in until the outlet valve is shut, and then the inward valve acts.

7400. Do you consider that the existing Sanitary Acts contain most of the provisions necessary for the government of local board districts?—I think they do, but of course they want codifying and rearranging.

7401. But do you think that they want further provisions?—Yes, I think that there are some further provisions required to make tolerably perfect the Acts now in existence.

7402. Could you name some of the further provisions which you think would be necessary?—I confirm the necessity which was pointed out by Mr. Rawlinson as to further facilities being necessary for carrying out a system of back drainage. There should be power to go through all the back yards of the houses in a street for the purpose of communicating with the main sewer. Upon the question of injuries to the public sewers, I think some further provisions are necessary. Under the present law any person may injure a sewer if he is content to pay a fine of 5*l.*, that is the maximum. A case recently occurred in Swansea where the penstock of the main sewer was screwed up tight by some persons unknown. There was a very little aperture left for the discharge, and a thunderstorm occurred, and the flow was so great that it backed up the water in some of the sewers, and no penalty could be enforced.

7403. Do you propose a heavier penalty?—I think I should be disposed to make it penal, wilfully damaging or interfering with a sewer. At present a person may absolutely stop a public sewer without incurring any penalty, the stoppage not necessarily injuring the works.

7404. Your suggestion as to penalties applies to the wilful damage?—Yes. Then I think that a further provision is necessary to prevent injury to water conduits. Swansea is supplied by a water conduit nine miles long. There are a certain number of manholes and washouts in the line of the conduit, and 18 months ago that conduit was wilfully stopped. I think that the power of punishment should be extended in cases of damage to or interference with water conduits.

7405. Have you any other suggestions to make?—Yes; I have referred to the difficulties with respect to the conversion of privies into waterclosets. At present it is doubtful whether there is definitive power given to local boards of health to oblige an owner to convert a privy into a watercloset. I would give such power. The power is used in practice by a little straining of the 51st section of the Public Health Act of 1848, but it is open to question. I would give that power where the water supply is abundant. Then with respect to byelaws as to buildings, I would give some further provisions. I think that the byelaws should extend not only to new buildings, but to old buildings. I am speaking now of the 34th section of the Local Government Act of 1858, which relates only to new buildings, and I think that old buildings should be provided for in the same way. Then byelaws made to apply to spaces belonging to old buildings have been held to be bad as exceeding the powers conferred by the Act. It is competent to the owner of a house built before the passing of the Act of 1848 to entirely cover the whole of his yard or garden, situated as it may be in a densely populated neighbourhood, so long as it joins the house. Upon the question of the removal of nuisances at present, where the owners of houses are allowed to construct drains therefrom under adjoining lands, and with an outfall upon outside property, and there only causing a nuisance by accumulation, the law is not clear as to which owner should be proceeded against under the Nuisances Removal Acts, the person on whose premises the nuisance exists or the persons who produce the nuisance. With respect to general district rates at present there is a doubt in case of bankruptcy whether a claim for district rates is on the same footing as a claim for poors rates, I think that that should be made clear. With respect to the Workshops Regulation Act of 1867, this Act is to be put in force by the mayor, &c., in council in all boroughs except Oxford, and by the local board in Oxford and other places not boroughs where the Public Health Acts are in force. The Act refers to the officer of health appointed by the local authority, and also to the Sanitary Act of 1866. Now, as by the Acts the local authority is, whether so intended or not, the council, and the officer of health is a local board officer, and as the Sanitary Act of 1866 is to be worked by the local board, it is difficult to know how to act. A council cannot receive and act upon the officer's report made under the Sanitary Act, or any Act under which they are not the local authority, nor, *vice versâ*, the local board. With respect to the Artizans and Labourers Dwellings Act, 1868, the machinery of this Act is exceedingly cumbrous and slow, and it is made additionally so by the fact that not being incorporated with the Nuisances Removal Act, the committee of the local board having charge of this branch of the business cannot act as in the case of nuisances without its acts being confirmed by the board. I think also that there should be a modification of the power compelling owners to lay out property for building purposes.

7406. What regulations are there as to buildings in Swansea?—No roads of less than 40 feet in width are allowed to be laid out when houses are to be built on each side, and the houses are to cover not more than one-half the entire area from front to back. I think that with respect to roads, where the owners neglect to complete the sewerage and the forming and the guttering of the road, a notice by the local board affixed at the end of the road, intimating that at the expiration of a given time if that road is not completed the works will be executed under the authority of the board, and the cost recovered from the owners, ought to be substituted for personal service to the owners on either side, as is provided for by the present law.

7407. Has the difficulty of borrowing money been found to be an obstacle to sanitary improvements?—Yes, very great, and I have no doubt myself that if provision could be made whereby local boards of health districts could borrow money upon somewhat the same terms as were enforced in the distressed districts in Lancashire, sanitary works to a very much greater extent would be undertaken throughout the country.

7408. Will you state the extent to which you think facilities might be extended?—I think that the precedent of that Act should be followed in future legislation, namely, interest at $3\frac{1}{2}$ per cent., repayable in 50 years.

7409. Have you had any experience as to the mode in which registration is carried on?—Yes, I have.

7410. You have acted, have you not, as chairman of the assessment committee of the Swansea union?—Yes. I have for many years acted there, and have had experience of the advantage of a committee being chosen from the board of guardians, and associated with a certain number of *ex officio* guardians. Nothing could be more satisfactory than the action of that committee.

7411. Do you believe that the registration of death is accurate?—No, I do not. I think that the present mode of registering death is not at all satisfactory.

7412. Have you any suggestion to make as to making it more satisfactory?—I think that the medical

officer of the union should in all cases be the registrar of deaths.

7413. What is your opinion as to the board of guardians being the local authority?—I think that a committee chosen from the board of guardians would make a very excellent local authority for a local district. Of course that applies to places outside corporate boroughs.

7414. You suggest that the medical officer should be the registrar. Are there any other sanitary duties which you think could be imposed upon the union medical officers?—I think that it would be a great public advantage if the duties now performed by several medical officers were all performed by one public officer, such as the inspector of children under the Factories Act.

7415. (*Mr. Shaw.*) Have you adopted in Swansea the 35th section of the Act of 1866, which contemplates an application to the Secretary of State and then gives him power to enable the local authority to register all lodging houses and inspect them and have certain summary powers in relation to them?—Yes, we have. There are inspectors of lodging houses apart from the inspector of nuisances under the Act of 1866.

7416. Is that found to work well?—Yes.

7417. Do you *bonâ fide* enforce such powers as are given in that section?—I have not been a member of the board for some time past. I know that this Act is in operation, but what the effect of that clause in the Act has been I cannot answer distinctly.

7418. But you believe it to be very beneficial?—Yes, I do.

7419. (*Mr. Powell.*) You stated, did you not, that the water supply is within each house, however humble the dwelling?—Yes.

7420. Do you find there is much wear and tear of material owing to carelessness, or worse, upon the part of the occupants?—A great deal, but I think it is decreasing as the people become better aware of the advantages to them of the constant supply.

7421. Are you aware whether any fine is attached to wilful or negligent wear and tear of pipes and taps within the houses?—No, there is not; those things are the property of the owner of the house.

7422. I believe that in the case of Manchester the repairs to pipes and taps are performed by the municipal authorities?—That is under a private Act.

7423. The sewage of Swansea being discharged into the river close to the sea, do you find that the incoming tide carries back the sewage, and causes inconvenience?—Not the least. The run of the tide carries it three miles from the shore.

7424. When the tide is at the flood?—No, by the ebb.

7425. During the hours of flow does it never come back?—No, it never comes back.

7426. The 78th section of the Local Government Act gives power to extend the time of repayment to 50 years in certain cases with the consent of the Secretary of State. Has application been made in the case of Swansea for that extension?—Yes, it has.

7427. And has it been refused?—No, it was acceded to. We have power to borrow, but the Public Works Loan Commission will not lend.

7428. Certainly there seems to be an extraordinary conflict between two great public authorities, the Secretary of State having granted the power, and the officials in London who lend will not exercise that power?—So great that I believe that our sitting here as a commission will be of comparatively little use unless some better means of providing funds is devised. I may say that the hardship to which you have referred is still more striking in the case where the Secretary of State is moved under the 49th section to carry out works. I am assuming that the inhabitants of a district dissatisfied with the sanitary provisions apply to the Secretary of State under the 49th section of the Act of 1866 to put in force his power for causing sanitary works to be provided, then the inability to provide the money to carry out what the Secretary of State might have ordered might follow.

7429. And that inability may arise from some peculiar view taken by the Public Works Loan Commission?—Just so.

7430. Did you provide for the repayment of your loan by instalments to the lender or by a sinking fund?—In both ways. A part of the money borrowed for Swansea was borrowed in 1854, when insurance offices chose that form of lending more than they have done latterly, and the repayment to the Royal Exchange Insurance Office, from whom the money was borrowed, was made by a sinking fund.

7431. Do you find that people in humble positions in society render difficult the working of waterclosets by carelessly sending down solids?—No.

7432. You do not find obstructions to the apparatus from that cause?—No, comparatively few.

7433. A drunken man coming home at night, for example, and breaking up the whole concern?—No. I have in my mind at this moment a long alley where it was thought that the pipes and ballcocks would have been destroyed in a week, but experience has shown us that the people are much more careful than was anticipated.

7434. Have you an inspector of nuisances beyond the police inspectors?—No, there was an inspector of nuisances, but after the visitation of cholera in 1866 the inspectors of police performed their duties so satisfactorily in every way that the then inspector of nuisances was converted into the inspector of lodging houses, and the inspectors of police were continued as the inspectors of nuisances.

7435. Are the ordinary policemen expected, either as a matter of practice or under the operation of an actual rule, to report to their superior any cases of nuisance which they may see on their rounds?—There is a general order to the ordinary policemen to report, but I believe that the number of cases that they report are very few.

7436. Have you had any cases such as were spoken of by a witness from a northern town, where the old highways have become streets, and where some question has arisen as to the duty which may be imposed upon the owners of widening and paving the highways when buildings are placed upon them?—Yes.

7437. How have you dealt with that question?—They remained unpaved and unwidened. I may say that in 1865, I think it was, there was an introduction of yellow fever into Swansea, from the West Indies, and an inspector from the Privy Council came down, and going over the town he reported favourably generally upon the state of the streets, and the local authorities of that day would have been quite ready to have met the difficulty of defective pavement, if they could have seen their way to have obtained the necessary funds at a reasonable rate.

7438. Have you in Swansea owners of property on a large scale, or have you chiefly small proprietors?—We have both classes. The owners of large smelting works are owners of a great deal of house property, and it is on account of the facilities that have been afforded to the local authorities by the readiness of the large ratepayers to encourage sanitary provisions that we have been enabled to do so much in the way of sanitary matters in Swansea.

7439. Let me direct your attention to clause 52 in he Thames Navigation Act, 1866, which says, "The "conservators shall cause the surface of the Thames "to be (as far as is reasonably practicable) effectually "scavenged in order to the removal therefrom of "substances liable to putrefaction." Do you not think it very desirable that local boards should in all cases have that power?—Yes, certainly in their own district.

7440. (*Sir T. Watson.*) In stating that you thought that various duties might be accumulated in the hands of the same medical officer, do you contemplate restraining him from private practice?—Yes.

7441. He would have sufficient to do without having his mind distracted by getting his daily bread?—Yes, and I think that private practice with public duties is almost if not quite incompatible.

Winn, Esq., M.P.

2 July 1869.

(60.) Rowland Winn, Esq., M.P., examined.

7442. (*Chairman.*) You are member of Parliament for North Lincolnshire?—Yes.

7443. And I think that you will be able to give us the result of your experience in the local government of rural districts in that county?—I am chairman of the Glanford Brigg board of guardians, and have been either vice-chairman or chairman for a number of years past, and of course in that way I have seen a good deal of the working of sanitary arrangements in the union.

7444. How many parishes are there in that union?—There are 54 parishes.

7445. What is the area in acres of the whole union?—165,470 acres.

7446. What is the population?—34,731.

7447. What is the gross estimated rental?—243,713*l.* The board consists of 57 elected and 15 ex-officio guardians, some of the parishes being very large and sending two guardians to the board.

7448. Do you consider that such a board would be a good local authority for all local government purposes throughout that area?—I think, on the whole, the board of guardians is the best that could be adopted.

7449. We have had various suggestions; one has been that the highway board would be preferable to the poor law board, chiefly because, being conterminous with the petty sessional divisions, they would have the advantage of petty sessional officers. What is your opinion upon that?—I am decidedly against it, for this reason: in the first place, in a great many parts of the country highway boards have not been set on foot. In our district we have no highway boards. They are now forming one or two in the county. We tried at the quarter sessions to divide the whole county into highway districts, but the feeling of the county was so very strongly against it that we were obliged to abandon the scheme altogether, and now there is certainly not half the county divided into highway districts. The authorities in petty sessional divisions would be the police, and I have the strongest possible feeling against the police having anything whatever to do with sanitary regulations. The difficulty that we have is to keep the police at present at all in the good graces of the people, and I am quite sure that if we appointed them inspectors of nuisances we should destroy the police for the purposes for which they are intended.

7450. You heard the evidence which Mr. Richards has given us of the police working well as nuisance inspectors in Swansea, but would you draw a distinction between the police being so employed in a town and in the country?—With reference to towns I know so little that I should not like to hazard an opinion. I think that there may be a very wide difference between town and country.

7451. Mr. Richards' evidence was that the higher officers of police were those who are employed for this purpose; should you have the same objection to the higher officers of the police being so employed?—Yes, I should have a very strong objection to the police being employed at all, because I am quite sure that in the district with which I am acquainted there is a great feeling against the police. We have to employ the police in various ways which are not popular, for instance, the removing of manure from the sides of the roads and the obstructions of highways; it has been very much the custom with farmers to place manure on the sides of the roads, but with that the police now interfere, not because it is a nuisance, but because it is an obstruction of the highway. There is great fault found about that very often, and in other ways they interfere with the farmers; for instance, laying informations for steam-thrashing machines being at work within a certain distance of a highway, or not being sufficiently guarded from view, and therefore there are so many ways in which they come already into collision with the people that I should very much, as a magistrate, object to their being used for sanitary purposes in our county.

7452. Do you think that they would interfere so much as to be offensive?—Yes, I do.

7453. What inspectors of nuisances are appointed in your union?—In our union there are three relieving officers, and we appoint them inspectors of nuisances for the board, and at every board they report if they have met with any nuisances in going their rounds.

7454. Are you not afraid that the relieving officers as the servants of the board might be not very independent witnesses against members of the board with regard to nuisances on their premises?—That is possible. I cannot say that any instance of that has come under my notice. I could imagine such a thing, but the guardians are generally a superior set of men in our part of the country; they are all very large farmers, and I do not think there would be very much fear of that.

7455. Do you find practically that your present inspectors are efficient in reporting nuisances?—Yes, I have no reason to think otherwise; they very frequently do report nuisances, and in all cases almost which I recollect, when a nuisance has been represented, it has been removed in the parishes.

7456. Can you tell us what salaries the relieving officers receive for this particular duty of inspecting nuisances?—I am not very sure at this moment, but I think it is some 5*l.* or 10*l.* a year beyond their ordinary salary.

7457. Do you think that that is sufficient to induce them to actively discharge their duties as inspectors?—Yes, I think they do their duties very well. I should say that once a year generally they have a more thorough inspection, and then they give notice that they are going to inspect to the people in the parish, and commonly the guardian of the parish goes with them, and if there is any fever or any epidemic disorder of any description, they generally have to special inspection.

7458. I suppose you are conversant with the Sanitary Acts, and particularly those which have been passed within the last five or six years?—Yes, I am to a certain extent, but I have never had my attention very much directed to them.

7459. You are aware, are you not, that several sanitary duties are imposed by those Acts upon vestries?—Yes.

7460. Would you transfer those duties from the vestries to the boards of guardians?—Yes, I would.

7461. Do you think that the vestries are not efficient in the discharge of their duties?—I think the very people who compose the vestries may themselves be the people who are making the nuisance.

7462. In the 54 parishes of your union I suppose the vestry would practically be a very small body?—Very small in some of them.

7463. And not likely to take very large views of public improvement?—I think not.

7464. Supposing boards of guardians to be made the local authority for all local government purposes, do you think that any intermediate authority should be placed between them and the Home Office, or should the Home Office directly communicate with them?—My impression is that there should be none between them and the Home Office.

7465. Do you think that the present powers of local authorities can be given to boards of guardians?—I should make the board of guardians a separate board for sanitary purposes, not in any way connected with their duties as guardians of the poor.

7466. Do you mean that they should meet at a different time for that purpose?—Yes. Perhaps I may say that the practice with our board is to meet at 10 o'clock in the morning for the ordinary business of the board, and at half-past 11 for what they call special business, and we get perhaps an hour or an hour and a half for special business. This sanitary business would come in as special business, and I think there is not sufficient time for it to be properly attended to in the ordinary hour and a half which is devoted to special business.

7467. Would you have the guardians who are to be members of the local authority specially elected for that purpose?—No; I should make the whole board a sanitary board.

7468. Do you think that they ought to form a committee for this particular purpose?—I think there is no objection to their forming a committee for this particular purpose, but if they should form a committee they must meet, and the difficulty is to get those people to meet, and I should prefer having the whole board.

7469. But with the 70 members of your board do you think that many would meet a second time for this purpose?—Yes. I do not think there would be any difficulty about that. They would meet on alternate Thursdays on this board. Every Thursday is a market day, and therefore they might take an alternate market day, and they would come just as freely to that as they would to the board. I may say that there is very great difficulty in getting them to attend even the board meetings. Out of a board of perhaps 60 I very seldom indeed have 20 present.

7470. Is that because the more distant guardians do not come?—No, I do not think that at all.

7471. Is it from general carelessness?—I think that since the Union Settlement Act has been passed there is great carelessness about attending, more so than there was before.

7472. Do you think that there is a slackness of local interest?—Yes, I do think so decidedly.

7473. How often do you think this board ought to meet in the course of the year for sanitary purposes?—I think four times a year under ordinary circumstances would be sufficient, but I think they must have the power of meeting at any time especially in cases of sickness breaking out.

7474. On which occasion the clerk should have the power to call a special meeting?—I think so.

7475. I suppose the clerk would be the same in both boards?—Yes, I think so certainly.

7476. This board, as a sanitary board, not as a board of guardians, would appoint the inspectors, would they not?—Yes.

7477. And the medical officers of the union?—I think the medical officers of the union had better be the medical officers to the sanitary board, because their returns are made every fortnight to the board of guardians, and they specify the complaints that are prevalent in each place, and therefore the attention of the clerk to the board and of the board generally would be called to the fact of extraordinary illness or fever being prevalent in any one place, and if it was necessary he would call a meeting of the sanitary board at once.

7478. In giving your preference to the board of guardians over a highway board, do you think that any other new board would be better than either?—No, I think there would be no advantage in a new board at all. I think we have quite boards enough. We have the board of guardians, and we are threatened with a county financial board, and we have a highway board. I think there are abundant boards, and there would only have to be more frequent elections of representatives on those boards. I think the board of guardians would do everything that was required.

7479. Have you ever considered whether the boards which are now being formed for river conservancies might be used for local government purposes generally?—No, I have not, but I think they would not answer the purpose as well as boards of guardians in our part of the country. In North Lincolnshire there is really nothing for such a board to do, unless it had sanitary measures under its authority as well. In the West Riding of Yorkshire, where I am also interested, perhaps that might not apply, because there are in Yorkshire those boards already existing.

7480. How far do you think boards of guardians would be active in the matter of public improvements, such as improving drainage or water supply?—I cannot say that I have any very great opinion of the activity of boards of guardians, but I must say that I think that they would be as active as any other authority that you could find in the country.

7481. Would you have them set in motion by the Home Office in cases where the residents complained of works being necessary and yet not performed?—Yes, I think so decidedly.

7482. How, generally speaking, are the parishes throughout your union off for water supply?—In North Lincolnshire generally they all have spring water close on the spot in wells.

7483. Are there not cases of parishes getting their supply from polluted streams?—No, there are cases where the wells themselves become polluted, and I think those want attention more than almost anything.

7484. Is the water polluted from want of proper drainage?—It is polluted from privies and pigsties.

7485. Do you think that rural parishes might combine for a better water supply and for better drainage where the works might perhaps be too large for any one small parish to undertake?—In those parishes that I am acquainted with I do not think any combination is necessary. There is a full supply of water, except during extreme droughts, and then there is very often a great scarcity.

7486. But as to improving drainage and sewage, and preventing water being polluted by the want of such public works, might not parishes combine for carrying out large works of that sort?—They might, no doubt, but I remember at this moment hardly an instance in North Lincolnshire where I think it would be required. The parishes are large, and most of the works would be done within their own parish.

7487. What sort of works would cure this pollution which you say takes place?—Nothing but sanitary tubes, I suppose, and enclosing the wells, and in fact taking care that the ashpits and the privies do not communicate with the wells. There is one instance in our union where that is very bad indeed. There is a parish called Winterton in the Brigg union, containing a population of about 2,000, and for, I think, three years low fever has been constantly in that parish. It is one of the parishes in which we tried to form a highway board, but they took the alarm and established a local board instead, and the number of cases of fever was very great indeed. It was brought under the notice of the board of guardians by the medical officer, and of course the board of guardians had no power to take any steps in the matter, but they represented the state of things to the local board at Winterton, who did nothing. We reported it on one or two occasions to the Privy Council in London, and they sent down Dr. Thorne, the inspector, who reported that the fever was occasioned entirely by the bad state of the wells. The local board at Winterton have done a certain amount of work since, but it is still, I believe, in a very inefficient state after three years, and fever is still prevalent.

7488. How do you think such a case as that might be more effectually met?—I think that it should be under the board of guardians, and that the board of guardians should have power to order the work to be done, and that if the inhabitants objected to any order that they gave on the ground of its being an unnecessary expense, I think the board of guardians might then ask the Home Office to send down an inspector to examine and see whether the works which they have ordered were necessary or not, and if the inspector reported that they were necessary, then that the board of guardians should have power to require it to be done after giving the particular parish the option of doing it themselves in the first instance.

7489. Do you think that the board of guardians as the local authority might have power to compel proper buildings being provided for labourers?—Yes; but I think there is a great deal being done now in improving cottages, and that improvement is going on so fast that I should hesitate to use any compulsory power if it could be avoided.

7490. Do you think that the local authorities might lay down rules both as to the size of the rooms in the

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cottages, and as to ventilation and healthy condition?—Yes, I think they might with advantage.

7491. Do you think that the great landowners in Lincolnshire would submit willingly to laws laid down by local authorities as to the construction of their cottages?—I should have no objection personally, the least in the world; probably some might object.

7492. Of course such laws should be open to an appeal to the Home Secretary?—Yes.

7493. And they should have his sanction in order to guard against unreasonable laws being made by the local board?—Yes; but I think that the cottages are improving so rapidly that there would be no occasion for anything of the sort in the district that I am acquainted with.

7494. Might not one objection to such laws being laid down be that the number of cottages would be restricted, and perhaps not provided equal to the demand of the population?—I think if it were carried out to an excessive extent it would be so.

7495. I suppose in Lincolnshire and in most rural districts, the landlords are building cottages for labourers at a very great loss in interest upon their outlay?—We do ourselves a good deal in cottage building on the property that I am connected with, and the houses on an average cost 100*l.* a piece, and the rent that we get is about 3*l.*

7496. That, I suppose, is not really one-half the building interest on the outlay?—No, I should think not; certainly not more than that.

7497. The fact being that there as elsewhere the landowners build cottages as parts of their farms?—Yes, I think so. There are some parishes that I know in North Lincolnshire where the number of cottages are too small, no doubt; they are supplied from large villages where there are a number of freeholders in the immediate neighbourhood, but they do not exist to any great extent.

7498. Are gardens included in that 3*l.* rent?—In our own case the labourers are wonderfully well off. We have no cottage with less than half an acre of garden, but it is not included in the 3*l.*, and they have about four acres of grass land each as well.

7499. What sort of wages do such men receive?—Our ordinary wages are about 2*s.* 6*d.* a day.

7500. Would there be any difficulty in apportioning the rates for public improvements levied by the board as the local authority, where the improvements do not apply to the whole union?—No, because you would rate the parishes for the improvement within each parish. I should make each parish pay its expenses of improvement within itself.

7501. And if the improvement applied to a particular landowner it would be a special rate upon him?—Yes, certainly.

7502. Do you think that if a large improvement applied to an area outside the union, an arrangement could be made between the two unions?—I think that there should be a rate between the two unions; if one union benefited by some works which were done in the next union, I think undoubtedly the union which benefited should contribute.

7503. But you would keep the parish as the unit of rating area?—Yes, I should.

7504. Brigg being the centre of your union is a large place itself, is it not?—It contains about 4,000 inhabitants, and it has a local board of health of its own.

7505. What would be the relation between that local board and the board of guardians, supposing the guardians were made the local authority for the whole union?—With the permission of the Commission I will read this letter from the clerk to the board of guardians, who is clerk also to the Brigg local board:

"Dear sir, Brigg, 19th July 1869.

"Referring to your letter of the 16th instant, "addressed to Mr. Freer, the interference of the "board of guardians in the Winterton cases consisted simply of complaining to the Poor Law "Board of the apparent neglect of the Winterton "local board of health to do its duty, the guardians "having really no more authority in the matter "than any private person would have had. * * * "It is difficult to form an opinion as to the best "authority for carrying out the sanitary laws. On "the whole I am inclined to think that the board "of guardians, or better still a committee of guardians "constituted in a similar manner to the assessment "committee, is as good as anything that can be devised. "I think that in the country at all events the guardians, or a committee of them, should be the sole "authority, and that their jurisdiction should extend "over all small towns within the area of the union, "even if they have adopted the Local Government "Act. I think the highway board would be no improvement, that probably numerous objections "would be made to the employment of the police in "domiciliary visits such as those which ought to be "made by the inspector of nuisances, whilst the "creation of a new special board with so many conflicting administrative bodies as now exist would "only be increasing present confusion at a serious "cost."

My idea is that the board of guardians would give all sanitary directions, whatever they were, to the local authority for the local authority to carry them out, and if they did not do so, then the board of guardians should carry them out.

7506. I understand your proposal to be that the board of guardians should be a sort of superior authority over all the local authorities in the union?—Yes, that is my idea.

7507. And they would give their orders to the local board of Brigg in the same way as they would give their orders to the vestries of the other parishes?—Yes, exactly; I think that if the parishes objected they should have the power of objecting, and then the board of guardians which should be the sanitary board should apply to the Home Office to send an inspector down to ascertain whether the works which they had ordered to be done were really necessary or not.

7508. But supposing that to be the case, would it not work unequally, because you propose to deprive the vestries of all sanitary powers, but you would leave the local board of Brigg sanitary powers, so that they would not both be in the same relation to the board of guardians, the one having powers of its own and the other having none?—No; I should give my directions from the sanitary board to the local authority, whatever it was, and in ordinary parishes I presume that the local authority would be the vestry.

7509. Would you deprive the local board of Brigg of the powers it now has?—I would not absolutely supersede them; I would allow both local boards of small places and parish vestries where there was no local board, to carry out sanitary works for themselves if they chose to do so, but if they failed to do what was necessary I would give the sanitary board (*i. e.* board of guardians) full power to compel the work to be done. I think that towns perhaps of a large size, having their own police, should not be interfered with. There should be some limit to the interference with reference either to the population of the town, or probably to their having police of their own.

7510. So that even if the board of guardians were made the local authority for the whole union, you would leave any towns of a certain size within that union to act independently still?—Yes; I think towns having their own police might probably act independently, and be controlled only by the Home Office.

7511. (*Lieut.-Col. Ewart.*) In rural districts what unit would you propose as the local authority?—The parish.

7512. Would you have a special board in the parish?—No; I think the vestry of the parish would be sufficient.

7513. It has been represented by some witnesses that the vestries do not practically meet often enough, nor are sufficiently in continuous operation to direct sanitary operations; what would you say upon that

subject?—There is no other authority in the parish who meet more frequently, and I do not know that there is any reason why they should not meet more frequently than they do, if there is occasion for it. I think that they do not meet simply because there is nothing for them to do.

7514. It being of great importance for the prevention of disease that nuisances should be promptly removed, what system would you propose for that purpose? and to ensure their prompt removal what should be the action of the inspector of nuisances?—I think that the sanitary board should give notice to the parochial authorities to remove the nuisance.

7515. Would it not take some time to put it in operation?—No, I think not, because the sanitary board being practically the same authority as the board of guardians, at every meeting of the board of guardians nuisances of this sort would be reported by the inspectors. In our case the inspectors of nuisances are the relieving officers, and they report at each meeting of the board what nuisances they have met with during the fortnight.

7516. Supposing notice to be given and no attention is paid to it, what would be the next step?—For the sanitary board to do it themselves, and charge the parish with the cost.

7517. But if they meet only once a fortnight, might not a nuisance under these circumstances exist for a month without removal?—I think not; I think that would be sufficient. I do not know any instance where any harm has come of their not meeting more frequently.

7518. Would you have any superior class of inspection to that within the control of the board of guardians?—I have thought that over, and I think that in some districts, where there is a large population, it might be desirable; but under ordinary circumstances it probably would not be found necessary. If so, I think that two or three unions ought to be joined, and have one inspector over the whole. I think that there would be no occasion for a separate inspector in each union.

7519. I allude rather to inspection for the purpose of keeping unions in action that might not be inclined to act.—It would be an inspector for the whole county, or something of that sort.

7520. I was about to ask you whether you would propose that it should be done by an inspector from the central office, or by a district inspector, or by a county inspector?—The objection to a county inspector is that counties vary so much in size. We have Lincolnshire, which is very large, and we have Rutlandshire, which joins it, which is not so large as the very union of which I am chairman.

7521. In those large counties, if you assume county inspection, you would work by districts, would you not?—I think, for instance, Yorkshire would be too large for any inspector; but if it were worked by ridings, the West Riding would be of itself full work for one inspector; probably the North and East Ridings might be got through by one.

7522. But you think that some inspection of this kind would be necessary?—I would not go so far as to say that it would be necessary. I think that it probably would be desirable, in some districts at all events. I think that there would be very little for an inspector to do in Lincolnshire.

7523. Have you any corporation or body in your neighbourhood, such as the "lords of the levels", for the control of the water and arterial drainage?—We have a court of sewers that extends over a certain area a certain distance from the Trent; but I think that that would be wholly inapplicable for this purpose, because it is simply for the surface drainage of the land that flows into the Trent.

7524. You would keep that board to their present duties; you would not enlarge them?—Yes; I do not think that it is a suitable board for sanitary purposes at all; it is merely local; it goes a very great distance; it goes from the Humber down through Lincolnshire and Nottinghamshire.

7525. Would you not consider that board as very important for its present duties?—Yes, I think it is necessary for its present duties. It keeps the outlets of the drains into the Trent, which are constantly being silted up, the Trent being full of what they call warp in that part of the country, which is mud. The river is very thick indeed, and the mouths of those drains are very liable to be constantly silted up with this deposit by the tide, and they keep all those mouths right by sluice doors at the outlet into the river, and they also attend to the system of arterial drainage; they lay no rates, except for the payment of officers, and they compel the occupiers or the owners on each side of the drains to clean out the drains so far as they go through their own land.

7526. Do not they assess on the whole of their district?—Yes, they assess on the whole, but it is a mere nominal rate; it is for the payment of officers, and the cost that there may be in sending circulars with regard to meetings, and that kind of thing.

7527. (*Mr. Powell.*) When you suggested that the board of guardians should meet, I think you said four times a year, did you contemplate their having any control over new buildings?—No, I did not, but simply with respect to drainage and sanitary purposes.

7528. I gather from your evidence that in your judgment the erection of new buildings ought to be under the control of some authority, and you think that the board of guardians are the best authority?—I think that if they are under any authority the board of guardians probably would be the only one that you could practically put them under.

7529. Then in order to prevent undue interference with the progress of building, it would be necessary for the board of guardians to meet more frequently if they had control or superintendence over new buildings?—But I should not be at all in favour of allowing no one to build a house without its first being approved of by the board of guardians.

7530. But you think that there ought to be certain regulations laid down as to the cubic space and the like?—There might be, but without interference by the board of guardians; there might be a general regulation throughout the country.

7531. How would you work it out?—Simply thus: you might say that a person shall not build a house, the rooms of which do not contain so many cubic feet.

7532. Supposing that they did not contain a given number of cubic feet, whose office should it be to discover the fact, and how should that authority move?—I really have not given attention to that subject. As far as I know of buildings I do not think that you would have any reason, or hardly ever, to put it in force if you had such a regulation. I think in the houses that I know the rooms that are being built are ample for the purpose for which they are intended.

7533. That is on the supposition that the requirements are very moderate and reasonable in their character?—My idea of what a cottage ought to be is that it ought to have a good living room, or a good kitchen, perhaps 16 feet by 14, and I think it ought to have a back kitchen about 12 feet by 9 or something like that (I am talking of what we do ourselves), a larder, three bedrooms up stairs, and two of them with fireplaces in, and I think that there ought to be outbuildings, privies, in proportion.

7534. Would you have a privy belonging to each house?—Yes, to every one.

7535. What minimum height would you have the rooms?—In the cottages that I have built they are about 8 feet 6 in height.

5736. Are the rooms on the ground floor?—No, the bedrooms are all upstairs.

7537. What height would you have the ground floor?—About 8 feet. The bedroom is higher than that, because part of the height is taken out of the roof.

7538. As to the windows what do you say?—I like having very large windows.

7539. Open at the top?—No, I always have them

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made with three lights, two of the lights to open outwards by casement.

7540. Do you think that some general requirement in the statute book, or made by the Secretary of State by virtue of powers given to him, might fairly enact that no houses should be built below those dimensions?—I do not know whether that would be called an excessive dimension. I know that what I have described is a better cottage than the average, and I should not like to build any cottage worse than that.

7541. Do you think that you could build a cottage such as you have described for 100*l.*?—I have often gone into that very carefully, and the cost is about 100*l.*, including putting in the fixtures, but then we have stone on the spot and I put no value on the stone.

7542. Is timber grown on the spot?—No, it is all foreign timber.

7543. (*Lieut.-Col. Ewart*). Do you build them in pairs?—Yes, always in pairs. I have estimated that a pair of cottages generally cost 200*l.*

7544. (*Mr. Powell*), I presume you could not build a single cottage on that scale for 100*l.*?—I think not perhaps.

7545. Do you save some little by building them in pairs?—Yes.

7546. Do you include any arrangements for water supply in the house that you have mentioned?—Only rain water.

7547. But do you build tanks to store the rain-water?—We sink a well for every pair of cottages practically, not always but commonly; perhaps there may be two pairs together, and one will suffice for them.

7548. How do you get rid of the refuse from the privies?—Into the ashpit.

7549. Are they cleaned out very frequently?—I really do not know how frequently they clean them out. I know nothing of what happens after they are built. I never hear any complaints whatever about them.

7550. In the fifth section of the Nuisance Removal Act of 1860 these words occur, "The board of guar-"dians for a union may appoint a committee or com-"mittees of their own body, under section five of the "said Nuisances Removal Act, to act in and for one "or more of the parishes or places for which the "board is the local authority." Assuming that the board of guardians is the authority as you suggest, which should you think the better, that in a given parish action should take place by a committee such as described in that section which I have read, or that the vestry should be the authority for any parish, bearing in mind that the vestry has the power of appointing committees?—I think on the whole that the vestry would be best.

7551. Do you think that there would be no balance of convenience in favour of the committee of guardians, seeing that the guardians in the union are the authority for the union?—I think that where you can induce a parish to do the work for itself, there is no reason to interfere with it more than you can help, and as long as the vestry will do what you consider necessary to be done, I think that they would be more popular in the parish, and I see no objection to allowing them to do it. If they will not do it, then I should have the board of guardians, which would then be the sanitary board, step in and do it themselves.

7552. Instead of leaving it open to the guardians to appoint a committee if they choose for any given parish, it might be enacted that the guardians for the parish must of necessity act in the parish; in your opinion, would you rather have the parish acting by its own representative?—As there is only one guardian in 99 cases out of 100 sent from each parish, you could not possibly delegate to that one guardian the whole responsibility.

7553. Have you in your district agricultural gangs?—You will find that fully reported in Mr. Stanhope's report. We have none except private gangs to a very small extent.

7554. Do you have many agricultural labourers coming to your district for a time to gather the harvest?—Yes, Irishmen.

7555. Do you find that their arrival causes the overcrowding of the houses?—No, undoubtedly not, because as far as I know they all lodge on straw that is put into the barns for the purpose. I do not think that any of the cottagers would take them in.

7556. But supposing that they were to reform their habits and become more welcome guests, do you think that there would be danger of overcrowding?—I could imagine that if the present practice were not carried out of lodging them in the barns, which the Irishmen prefer infinitely, and they had to go into the houses for two or three weeks, they would be overcrowded certainly.

7557. You think that in your district it is not necessary to give any further authority to guard against overcrowding, by the registration of lodging houses or the other places which are occupied by lodgers?—No, I do not think it is; the fact is that almost all the parishes in our part of the country are owned by large proprietors, and in those parishes there are practically no lodging houses; but there are a few parishes in which there are lodgers; for instance, this very one, Winterton, which I have been mentioning.

7558. What is the condition of the houses owned by small freeholders of which you spoke some time since?—I have not examined them myself. In the parish that I am connected with there are no freeholders, but Winterton, of which I have been speaking, is almost entirely composed of freeholders, and in those I should suppose that the new houses that are built are decidedly inferior to what I have been describing.

7559. Do you think that the freeholders own anything beyond the houses?—Yes, the whole of that parish almost is owned by them. Some of them having 200 or 300 acres, and from that down to one or two acres.

7560. By the term small freeholders you do not mean speculators in cottages, such as men who have a few cottages as a speculation, and probably nothing else, but you mean small landowners?—No, I meant the smaller ones, because those that you may call the small landowners generally own a farmstead with a farm and few or no cottages. The cottages belonging to the town and being built on small freeholds.

7561. You have mentioned in a former answer houses belonging to small freeholders; did you mean by the term small freeholders the owners of some few cottages, or did you mean persons who are the owners of some small plots of land?—I meant to say men who are owners of perhaps four or five cottages and an acre or two of land.

7562. Do you intend to convey to the Commission your opinion that those cottages are not in a satisfactory state?—I do not know sufficient about them to say that that is so, but I am sure that those cottages generally which are so built are an inferior description of cottages to what I have been describing to the Commission.

7563. Are there many houses inhabited by the labouring class which belong to the owners of mills or malting establishments or the like?—No, not in our neighbourhood.

7564. (*Mr. Richards.*) Is there a great deficiency of cottage accommodation in your district?—No, I do not think there is a great deficiency. There are some few of the parishes I believe that might have a few more cottages, but I do not think there is a great deficiency. Lord Yarborough is the largest owner in that part of the country; he has 65,000 acres all in a ring fence, and I am told that some of those parishes have not had sufficient cottages.

7565. Where a deficiency such as you have described exists, would you by any legislative enactment compel the owners of property to build a sufficient number of cottages?—I think it is curing itself so fast, and they are building cottages so rapidly, that I would not

interfere by legislative enactment, unless it was absolutely necessary. I think that in four or five years time there will be no such thing as a want of cottages as far as I know.

7566. You spoke of the duties performed by the police being obnoxious to the farmers; the enforcing of the law in any way is obnoxious is it not?—To a certain class it may be, but not to the large ratepayers I think; for instance, taking up a man who is drunk by the side of the road, that would not be obnoxious to anybody, except possibly to the man who is taken into custody.

7567. Take the case of a farmer who permits a nuisance to remain on the side of the road inside the hedge, would it be obnoxious to him to be compelled to remove that nuisance by a policeman?—The police do not now interfere in such a case, and I should not wish to see them obliged to do so.

7568. I understand you say that, assuming that there was a lot of manure by the side of the road, that would be an obstruction, but assuming that there was a lot of manure just on the other side of the hedge, that would be a nuisance?—Yes, I think that a farmer would feel a strong prejudice against the police if they did interfere inside his premises.

7569. However injurious it may be to the health of the district?—I can hardly imagine a case where in the open air a manure heap would be injurious to the health of the district.

7570. Of course we are not speaking of a particular farm which has a large area, but where a nuisance may remain very near a village?—I should feel as a magistrate very strongly against making the police more unpopular than they are. We want the police for criminal purposes far more than for sanitary purposes, and I would rather employ sanitary officers than the police for that purpose. I am sure that that is the opinion also of every magistrate on our bench.

7571. Does not your experience also go to the fact that the authorities expect the men now to do the duties of inspector of nuisances for a ridiculously small salary, upon the basis that they cannot perform he duties without a salary of 5*l.* a year I think you aid?—I am not quite sure about the amount that is paid them, but I know that it is only small, because really the duties that are placed upon them in consequence are very little more than they would have to do if they were not inspectors of nuisances at all. They are always going about amongst the cottages of those poor people, and they have to visit them certainly once and probably twice a week, so that their attention is more readily called to any nuisances that exist I think than that of anybody else.

7572. Who inspects your weights and measures?—The superintendent of police now, since the office of high constable was done away with.

7573. This superintendent I suppose is one grade below the head constable?—Yes.

7574. Do you not conceive that the superintendent of police might very well act as inspector of nuisances, and do you not think that his influence would generally be such as that the duties would be performed without being obnoxious?—I think that the relieving officer could do it better and more efficiently, if he will do it than the superintendent, and I have seen no reason to suppose that he will not do it, because I think that our three relieving officers of the Brigg Union do it as efficiently as the superintendent of police would.

7575. Do you think that that would apply throughout the whole country?—I could not answer that question, because I have no sufficient knowledge.

7576. Does your experience rather lead you to expect that the relieving officer would scarcely have sufficient moral courage to perform his duty in cases where the guardians were concerned in the perpetuation of nuisances?—As far as my experience goes, I have known one or two cases in which they have mentioned farmyards which were objectionable where the farmyard was in the hands of a guardian or a man who had been guardian, because they change of course every year, and I do not think there is reason to complain of them.

7577. You put in a letter received from the clerk to the Brigg union. I presume he is a gentleman of great experience in sanitary matters?—He is a solicitor in large practice there, in fact the largest practice.

7578. I think he suggests that the local authority might very well be formed by a committee of the guardians, somewhat in the same way as the assessment committee is now formed?—Yes, he does.

7579. Having regard to the advantage which must accrue from the introduction of an educated element in the committee, or in any other authority for sanitary purposes, do you not conceive that a committee such as has been suggested by the clerk, where a certain number of *ex officio* guardians would be in some respects compelled to take a part, would be a great advantage?—I think it would be a great advantage on any board, or on any committee, to have a number of *ex officio* guardians. I myself am an *ex officio* guardian of the Brigg union.

7580. Having regard to the recommendation of the clerk of the Brigg union, do you still think that the vestry would be preferable to a committee of the guardians, two or three of whom should be *ex officio*?—I never suggested that the vestry should be in lieu.

7581. But that they should be the executive authority?—Only for the one parish to which that vestry belongs. My idea is to have the whole board of guardians as the sanitary board for the whole union.

7582. Your experience of boards, I apprehend, would lead you to the common experience of us all, that the more the responsibility can be fixed, the better the work will be done; that if you give work to 12 men it would be better than to give it to 70, the total number of your board of guardians?—I am not altogether certain of that. If it was left open to the whole board, supposing it was known at a particular meeting the nuisances at one particular place were to be taken into consideration, and that great complaints had arisen from that district, I think that all the guardians would attend from that parish and from the neighbouring parishes and that you would have better information than if it was simply in the hands of a committee, which might not be well acquainted with the place.

7583. Suggesting that it is or may be the duty of any future authority not only to abate nuisances but to prevent nuisances, having regard to those duties, one of which perhaps may be, possibly, some supervision of new houses. do you not think that the work would be very much better done by 12 men than by 70?—If you could ensure the 12 men attending; but my experience is that we have the utmost possible difficulty in getting a sufficient number of even 50 to attend; and with the assessment committee there is considerable difficulty in getting the attendance of members; but I quite think with you that it would be extremely desirable to have some *ex officio* guardians taking an active part in the matter.

7584. Does your experience of Lincolnshire lead you to think that if 12 men had to do the work you would be much more likely to have an attendance of 12 than if the board were constituted of a larger number?—I am afraid that if you had 12 you would have to arrange to have a sufficient number present to make a board.

7585. Five would be a quorum, four out of the 12 being *ex officio* guardians?—You would have to arrange that five should be present. I think that it would be a matter of arrangement, and I would rather have the whole board.

7586. Do you think that it would be desirable to give the medical officer the duties of registrar of births and deaths?—In the Brigg union until recently the three medical officers have been registrars, but in two of the districts the relieving officers have now been made the registrars. In the remaining district the medical officer still retains the appointment.

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7587. Is it your experience that that plan works satisfactorily?—I never heard any complaint whatever against it.

7588. Does he as a matter of fact attend at the houses where the deaths take place, or is the information in the majority of cases brought to him?—I think that he sends a form to be filled up as soon as he hears of a death, he certainly does in the case of a birth.

7589. Have you sufficient information generally upon the question of registration to give the Commission an opinion whether you think it is desirable in all cases to make the medical officer the registrar?—No, I have not. I think it certainly answers in our district where that is the case.

7590. (*Earl of Romney.*) How many members have you on your assessment committee?—I do not remember at this present moment; I think about 12.

7591. Eight elected and four *ex officio*?—Yes.

7592. That is the same sort of number and quality, is it not, that you suggest to have upon the sanitary committee?—No, I do not suggest a sanitary committee at all. I suggest that the whole board should be a sanitary board.

7593. The whole board would consist of how many?—In our case it would consist of somewhere about 60.

7594. You would prefer to have that large number to a selected number?—I would have the whole, because I think there is great difficulty in obtaining attendance, and I would rather have the whole to select from than a small number.

7595. Then so far as you value the power of *ex officio* guardians of course they are much more liable to be swamped at a meeting composed of 60 or 70 persons than they are at a meeting of 12?—I have a large board to deal with, who are all large farmers, and I have never seen the least disposition to swamp the magistrates in any way whatever. I am constantly there myself as the only magistrate, with 20 or 30 guardians, and I must say that I never have had any dispute with them of any sort or kind.

7596. You have given us a great many details with regard to cottages, but you have not stated the thickness of the walls, and the materials of which the walls are built?—The houses that I am concerned with are built of stone, and the outside walls are about 20 inches thick.

7597. Are they hollow?—No.

7598. Have they a damp course?—Yes, we put in a damp course of asphalt.

The witness withdrew.

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(61.) Major-General Sir William Denison, K.C.B., examined.

7599. (*Chairman.*) You are chairman of the Commission appointed to inquire into the best manner of preventing the pollution of rivers?—Yes.

7600. We find from the proceedings of your Commission, which have already been furnished to us, that a good deal of your inquiry travels over the same ground as our inquiry, and we are very anxious to get your opinion and views, both to assist us and also that we might run as much as possible in the same groove, and not come to conclusions in collision with yours. I see by your questions that a great deal of the information which you have been acquiring as to watersheds of rivers and their tributaries, and the towns on each, and the works which have been carried out in those towns for sewage, water, gas, and other purposes, and as to the condition of those towns with reference to markets, slaughter houses, and other local buildings, is similar to the information which we are acquiring as to towns for our purpose also; but there is this great distinction between the subject of your inquiry and ours, that your inquiry is into the best mode of getting at a particular object, and ours is how to improve, consolidate, and simplify the laws and the authorities for all general purposes of local government, but we should be glad of your opinion, as far as you have formed an opinion upon the evidence which has been brought before you, as to the general condition of the local authorities throughout this kingdom; whether they are satisfactory for their purposes or what alteration is required?—As far as I have been able to draw any conclusion from the examination of Lancashire especially, it is that nothing can possibly be worse than the local organizations at present.

7601. Is that from the defects and the complication of the law, or is it from the authorities being deficient in power?—Partly from both, but it is not so much that they are deficient in power as deficient in will. There are Acts of Parliament passed which are placed into the hands of the local authorities to work out, which are utterly and totally disregarded. The Act of Parliament clashes with the interests of classes, with manufacturers and others, and it is totally disregarded. I will, with the permission of the Commission, give two instances: In the first place there is an Act compelling people to consume smoke in towns, but that is utterly disregarded, because of course the people who make the smoke are the people who are held responsible for putting the Act into operation. There was an Act passed in 1862, at the instance or the application of the trustees of the Bridgewater Canal, which Act prohibited people from throwing ashes into certain classes of rivers through which their navigation passed. Their solicitor came to us very soon after our arrival at Manchester, and brought all these matters before us, and I asked him whether that Act had had any operation at all, or what the operation had been. He said that it had lessened the amount of ash thrown in by about two per cent., and he handed me a copy of the Act; I said "It ap-" pears to me that this Act is simple and clear " enough, why do not you put it into operation? " Why do not you prosecute those people whom you " find throwing ashes into the river?" He did not like the question; he said, "Well, we are thinking of " doing it," but I got it out from the people themselves, that they had combined, and that they had given the trustees to understand that if they brought an action against any person for throwing ashes into the river the whole of them would combine, and would send their goods by rail instead of by canal.

7602. Do you think that the law itself requires things to be done which cannot be done?—No.

7603. Do you think that the defect is in the power to compel the authorities to act?—Exactly; the difficulty is in getting the proper agents to carry it out.

7604. You do not think that the laws make undue requirements?—No, I do not think so at all. I am prepared to recommend with regard to rivers certain courses which I am certain will be beneficial generally speaking, and at no time would they be onerons. I mean at no time would they claim more than they have a right to claim from the men under the common law of the land, and yet my difficulty is to suggest a body of people to carry out those provisions.

7605. We have had cases brought before us of the authority ordering parties to do some things, and the parties have said, "We do not know how to do it, and public opinion has not been formed as to how it should be done," and that answer has been considered sufficient to hang up any proceedings?—Yes, it has.

7606. What is your opinion as to the mode of doing such things as removing nuisances, or taking pollution out of rivers, not only sewerage, but the ashes and refuse of manufactures? Do you think that public opinion is sufficiently ripe for the law to act compulsorily?—I think it is. We have gone carefully into questions of that kind, and we shall show in our report the modes of getting rid of special nuisances, sewage for one, and all those manufacturing nuisances for others, and all that come under that general class. We shall show that in many instances they can be

removed, and there is evidence that they are in certain instances done away with altogether at an actual profit to the persons. There was an Act passed years ago having reference to the alkali manufacture. The old process was that you set free the hydrochloric acid of the salt into the atmosphere, and it killed all the trees in the neighbourhood about St. Helens, and so on. I think it was Lord Derby got an Act passed compelling them to modify the process, and they did so, that is to say, instead of letting the hydrochloric acid go into the atmosphere they pass it into towers where it is saturated with water, and it goes into the river and destroys the ironwork of the locks. It goes into the canal at St. Helens, and destroys the ironwork of the barges, so that they cannot have iron barges there, but are obliged to have wooden ones. It destroys the ironwork of the lock gates so that they are obliged to have wooden pegs instead of iron bolts. They were obliged to build the pier of the new bridge at Runcorn of millstone grit instead of limestone, because there was a sewer coming out of Widnes bringing out this acid water, which would have eaten away the pier in a very short time. But we brought before the people of St. Helen's evidence from a large manufacturing house at Glasgow, and from another at Bristol, showing how they could get rid of a portion of the nuisance, at a profit. These houses extract the sulphur from the alkali waste, and for a cost of 2*l.* they get 6*l.* worth of sulphur, so that it pays. There would be no hardship in passing a law compelling them to go through such a process, which is a very simple and a profitable one. In the same way you can proceed with reference to the acid, and get rid of that nuisance; and we are prepared to recommend that such an Act should pass making it peremptory.

7607. Do you think that the difficulty is that the authorities are the offending parties themselves in many cases, or are so influential that the authorities do not dare to act against them?—Yes, to a very great extent, but then there is this evil. There is a body of people on a river, from the top to the bottom. The first man gets the water from the hill side pure and clean, and he passes it down to his neighbour in a filthy black state. The neighbour gets it in that filthy black state, and is obliged to filter it for his own purposes, and having done the filtering, he may make it quite as bad, and pass it on to his neighbour; and so it goes on in that sort of way. If you were to compel the first man who took the water clean to hand it over clean, there would be no real difficulty in saying the same to every man on the stream. That again I am prepared to recommend.

7608. And you think that could be done even in the most crowded parts of England?—I do not think you can possibly have a more crowded part of England than Lancashire, and the great difficulty that I am really anticipating in Lancashire is the want of water. You have crowded an enormous population together upon a given area, and there is not water enough for them.

7609. How do you think that the authorities could be made more independent and act more efficiently?—I do not think you have got any existing authority. I am speaking with reference to my own purposes. I am to look to the supply of water, and to the purification of it, and in order to do that I must take in the whole valley of a river. I cannot deal with it locally; therefore I must take in the whole valley, and I must constitute a body having authority over the whole of that valley.

7610. Will you give us a little in detail how you hope by law to make that body operative?—It is only the sketch of an idea at present, but it was this, to take the lord lieutenant of a county and to make him president of a subordinate body of four or five, who should be made referees, not executive agents, but a body to which all the questions relating to the supply of water, and all the processes with regard to sewerage, should be submitted first. For instance, take the supply of water. The other day there was an application made by the town of Oldham to Parliament for an Act to enable them to step out of their own valley to the valley of the next river which went down by Ashton and Stalybridge, and to take that water for their own supply, and so deprive the people of Ashton of that water, and to make use of it for themselves. They came to Parliament, and the battle was fought in Parliament; they got half a dozen engineers to tell you this, and half a dozen to tell you that. It is a purely local question, and it has reference to the local wants, which would be very much better determined locally than by battling it out in a committee of the House. It struck me that those are matters which really require to be dealt with as purely local matters, and by a competent authority in the locality. How to constitute the authority is a question which of course requires a great deal of consideration. It should be a small body, and a powerful body, and a body not called upon to act or to suggest processes, but merely to express opinions, and to give information in point of fact to this or to that locality.

7611. What would be the relation of the lord lieutenant to the conservancy board?—Merely as chairman. I select him merely as a man unbiassed and having no local interests, but still having such a position as lord lieutenant as would make his opinion respected. He would be placed in a high position in front of the rest of the community there, and you could not dream of his having any little petty local influences to act upon him.

7612. How do you think the board should be constituted?—There have been several opinions given to me, but they have all appeared to me to fail in some respect. One opinion was this: There are very often, I do not know whether in any particular county, but in many counties, a set of sewer commissioners, and the proposal was to make use of those as electors, with power to elect half of the four or five or whatever the number of the board may be; but I am not prepared to say that I approve of any system of election. I have not made up my mind as to the mode. My opinion is made up that you cannot deal with the sort of nuisances that I have got to deal with locally; you must take in the whole area of a river basin, and you must get a body so constituted that it will be able to withstand the pressure that will be brought upon it very often from without by interested parties.

7613. Have you considered at all whether, if the local authorities were constituted all over the kingdom, delegates from those local authorities might constitute those larger boards; if, for instance, a delegate from every board of guardians throughout the area of a river basin could constitute the conservancy board for that area?—In the first place I think that would be too large a body.

7614. Your conservancy board must be a board which in some way represents the whole area of the river basin, must it not?—I would rather that it should not be so. I would rather have it a sort of governing body over the whole, and representing none.

7615. You prefer a monarchy to a representative constitution?—A good deal.

7616. But still perhaps it might not be equally easy to get this country to consent to it?—I do not think that there would be any difficulty in it. You would not be able to impute motives to them. A. and B. and C. and D. are now called upon to act in different capacities, and there is not a single one of them that can act without somebody saying, "Dear me, yes, but "he has got such and such interests; he is serving "his own purposes."

7617. Still in so large an area you would get beyond the reach of such local influences even in a representative body from the mere size of the area, would you not?—I do not know. I am speaking especially with reference to Lancashire at present, because that is a case with which I am more thoroughly acquainted.

7618. Have you considered at all whether those conservancy boards, in the first place constituted for

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the purpose of freeing certain rivers from pollution, might also undertake the general functions of local government?—Hardly of local government. I think they might keep the general superintendence of all sorts of nuisances. I mean those as regards health. For instance, there are inspectors acting at present under the Home Office, to whom complaint is made of special nuisances; they hear of this thing and that thing, and I take it that you might give to a body of the kind that I have suggested a general power over the whole of those matters. I think very possibly that might be done.

7619. Do you think that, the law now making it the duty of the board of guardians to appoint inspectors of nuisances for particular unions, those conservancy boards might take that duty out of the hands of the boards of guardians, and appoint their own inspectors of nuisances for the whole basin of a river?—I should think they probably might.

7620. So as effectually to remove even small nuisances in different parishes?—After you have got your system once in operation, I should think they might.

7621. Do you think they could not only undertake nuisance removal, but could also undertake to superintend the water supply and the drainage of every locality in a river basin?—Certainly not to superintend the details of it.

7622. But to be the supreme authority, as setting in motion the purely executive departments under them?—Yes; that is to say punishing the local authority where the law is not carried out. We will say there is a report made that a parish does this and does that, that the sewerage is not properly conducted, that the drainage is not properly conducted, that the water supply is neglected, and so on, they should have the power of dealing with that, and of giving an order to remedy the evil, insisting upon its being carried out, and taxing the parish for not doing it; that is to say, ordering them to levy rates for that purpose.

7623. Do you propose that the conservancy board that you are now contemplating should have subordinate boards for the tributaries of a great river, or would you have one board for the whole river and its tributaries?—In Lancashire I should have one board, for instance, for the Irwell. I would not take in the Mersey, and the Ribble, and so on, but I would have one board for the Irwell and all the tributaries of the river Irwell.

7624. You do not think that that would be too large a board?—I think not.

7625. You see no necessity for what Mr. Rawlinson has recommended, that there should be subordinate boards for each of the tributaries?—I think not; you may be certain that they would come into collision with each other.

7626. Is the Irwell itself a tributary to a larger river?—Yes, the Irwell falls into the Mersey, but it is a distinct body of water passing through a great coal district, and it has a variety of small tributaries. But if you were to carry out Mr. Rawlinson's suggestion a little further you would have one board for every brook.

7627. Even according to your present proposition, unless there is a still larger authority which would take in the Mersey and the Irwell, the neglect of the authority over the Irwell might render nugatory all the operations of the Mersey board?—No, I am taking the Irwell specially, because it comes in just close to the estuary. Take the Thames, for instance, which we have got to deal with next, I think you might either have one board for the whole valley or one for each bank, the right and the left bank. They could not interfere with each other at all, and it might be too large an area for one board to deal with.

7628. Have you ever considered whether the same board could undertake the keeping of the river free from pollution, and the arterial drainage for agricultural purposes into that river?—When I speak of keeping the river clear of pollution, of course I would give the board power over all the towns which would otherwise send sewage and matters of that kind into the river.

7629. Do you think that the same body that undertook the keeping of the whole river basin free from pollution might also undertake large schemes of agricultural drainage into that river?—I do not think they could undertake any scheme at all. I am not thinking of that board as an executive board.

7630. I do not mean executively, but that they should be a body who should make all the plans?—They might be the body to whom the plans should be referred. I think certainly that can be done.

7631. I mean that there should, not as at present, be two different bodies, one keeping the river from pollution, and the other planning agricultural drainage on a large scale of the same watershed, but that the two junctions might be put into the same hands?—I hardly comprehend the agricultural drainage on a large scale, the agricultural drainage may affect the quantity of water, and so on, but it would not affect the quality, as I imagine.

7632. Do you think that large drainage plans, including the whole area of a river, and the preservation of the same river from pollution might be remitted to the same body?—Yes, but I hardly understand the meaning of a large drainage plan unless you get into the fens or something of that kind. Take, for instance, the Thames, I hardly understand the meaning of large agricultural drainage.

7633. I am alluding to such great works as are undertaken by the Land Drainage Commission under the Land Drainage Acts, where the drainage of several large estates, and all the land through which one river flows is carried out upon one plan of arterial drainage?—I think there might be very great advantage in making one board control the two subjects.

7634. Do you think that in a county like Lancashire the lord lieutenant would be a good chairman of such a conservancy board with regard to great towns or is he not too much of a county officer to act well as chairman of a board which would so much affect great towns and cities?—I think not. I think he would be obliged to call upon the towns to act, and they are very willing to act. I do not think there would be the least difficulty; he would not interfere with the mode of action except as a judge.

7635. What would be the relation between the conservancy board and the town councils, and the local authorities, in great towns and cities within the same area?—I should say that in that case the province of the conservancy board would be merely to call upon the authorities to act, that is to say, to call upon them to carry out the law.

7636. According to your views they should not only call upon them, but be able to compel them?—Yes; I should have a law to compel them to do so, because if they have not the power to compel them to do so, you may as well leave that legislation alone altogether.

7637. Taking the conservancy board as the superior authority compulsorily setting the local authorities to act, do you think that the local authorities in such relation are properly constituted at present, or do you think that we should recommend any change in their constitution, they being at present, in corporate towns, the town councils, in certain places the improvement commissions, where there are such commissions, and in other places either the local board of health under the Act of 1858, if it is adopted by the locality, or such other bodies as may exist, as the board of guardians in rural districts?—I think you would find it difficult to make an alteration in the large corporate towns; the resistance would be so great to the change that you would not be able to alter the constitution of the body; it would involve a large outlay, speaking of my own work, but with a probable return; for instance, we propose, we will say, to insist upon their not allowing sewage to pass into the river, but suggest that it should be employed, we will say, for irrigation, as being the only profitable mode in which one can cleanse it. The outlay, of course would be heavy, but the profit would be large, or at least a very fair amount of per-centage upon the outlay, which must be levied by

rates on the town. And I do not well see how you could manage that by any other than the existing body.

7638. I suppose you do not contemplate acting upon any body except the town bodies, because it would not be necessary, for the mere purpose of keeping pollution from streams, to deal with country authorities?—Not with country bodies, but I should have to deal with individuals. For instance, take that very river, the Irwell; it is not above 30 miles long, yet there are 245 mills on it, most of which, recollect, are beyond the limits of any corporate body at all; they are individual mills on the stream, and some body must have power to deal with them.

7639. In that case do you propose that the conservancy board should deal directly with the individual, or should deal through any rural authority?—I do not see how you could have any rural authority in such a district as that, it is an extended town, the population creeps up the valley of the river, and in fact, I do not know that there is any local authority. Here and there there are villages which are small manufacturing communities which are under local Acts, a board of health, and things of that kind, and in those cases of course you would throw the onus upon them, because they have powers.

7640. Supposing the conservancy board to have this authority as you propose, and to be able to order town councils, and other town authorities, to do this and that, do you think that those town bodies have sufficient power to execute the orders of the conservancy board?—Yes, I think so; certainly in those cases where they have regular municipal bodies.

7641. Do you think that they ought to have greater power given either of borrowing money or of taking land?—They ought to have the power of taking land as in the case of railways.

7642. Greater power than the law now gives them?—Yes; they have that power under the Sewage Utilization Act, but they have to make a reference to the Secretary of State, and they have special power under a provisional order now, but they very seldom exercise it. In many instances they rent land now.

7643. Have you found in your investigations in Lancashire, and in considering the plans which those investigations have led you to form, are there many local Acts which stand in the way of what you think would be useful and necessary improvements?—I can hardly answer that question; nearly every town is governed by a local Act of some kind or other.

7644. Do you think that that would interfere with such general schemes of authority as you are contemplating?—It might clash; but my feeling would be to give an authority like the Thames Conservancy power to override those local boards; that is to say, to override the will of the existing authority. If the existing authority says, "We prefer being nasty," I should call that authority before me and say, "No, but you must not;" you will find that to a very great extent, that their want of will is the reason for their inaction; it does not suit them in point of fact to carry out the necessary works.

7645. I understand that you would give your conservancy board power to compel all the local authorities to do whatever they think right; but I am thinking whether there might not be local Acts which would impede the local authorities obeying those orders by not giving them power or means enough?—I think that is very likely to be the case; for instance, in the case which I have just now been referring to, namely, the taking land, it appears that there is a limit to the power of rating, and so on; and in order to effect a change in that respect you would require carefully to look into all those local Acts; or at least those who carry out the recommendations would have to look to that. It does not belong to me to look into all those details; all that I can suggest is the remedy. I think it very probable that the powers that they may have as regards rating, and so on, will require to be modified.

7646. As far as I can make out, your general scheme does not involve an alteration of the existing sanitary Acts which are under our discussion, but would imply the use of the authorities constituted by those Acts as the executive of the conservancy board?—I think so. In fact I am not called upon to do anything in the shape of the execution of works. I am only called upon to suggest a process by which the state of the river, which is now filthy beyond what you can imagine, can be brought into a healthy condition, and to suggest a mode by which it can be done. I find no difficulty at all in suggesting the means, but I do find very great difficulty in suggesting the body that is to carry them out.

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7647. I need hardly ask you whether your investigations in Lancashire have impressed you with the necessity of some alteration in the law to bring about a more healthy condition of our towns?—Nothing can be worse than the sanitary condition of Liverpool. They have been working very hard doing this and doing that, but nothing can be more melancholy than the state of the lower parts of that town, where they have got a large system of drainage, and the sewage goes quickly into the estuary, and is constantly swept away by the tide.

7648. Is it your opinion that there is a considerable sacrifice of life owing to this state of things?—A great sacrifice of life. The mortality in Liverpool is 31 per 1,000 instead of being 23 or 24, owing to causes which are removable, owing to the crowding of the population, to the want of water, although the estimate of the quantity supplied to them is a very large one, and to various other causes.

7649. Is it not your opinion that not only is there a sacrifice of life, but there is also a very great sacrifice of health, there being a very considerable part of the population who linger on alive, but who are in very much below the vigour which a man ought to have?—Very much so.

7650. Has anything been brought to your notice with reference to what I may almost call infanticide, or the great mortality amongst very young children, from neglect?—Yes, you will get that in the further evidence which we shall lay before Parliament. A statement was made to us that one-half the children that were born died before they were five years old. I was on the Health of Towns Commission years ago, and the same statement was made at that time. When that statement was made the other day to us I began to inquire into the cause. Of course there were a variety of causes given, and the principal one was that the mother was obliged to go back to her work in the mill in 10 days or a fortnight after the birth of the child, and then the child of course was neglected; it had not its proper food at proper times, and it wanted the milk and the care which the mother only was able to give; and the consequence was that a very large proportion of them died before they were 10 months old; and of the rest, one half of them died before they were five years old. On pressing the question further I was told first that it was the fault of the father, who insisted, for his own self-indulgence, on having the wages that his wife earned at the mill; and on pressing it a little further, I was told that it was because the millowners refused to keep two mules vacant (and I believe one woman has the charge of two mules) for her more than a fortnight.

7651. (*Mr. Powell.*) You stated one instance, and I think you were proceeding to give other instances where power was given to the authority, but where owing to local influences that power was not exerted?—Yes, I could give many instances. I have given as one instance the Act which was passed in 1862 at the application of the trustees of the Bridgewater Canal against throwing ashes and so on into the river.

7652. Has there been a subsequent Act with reference to the Mersey or the Irwell since 1862?—Not that I am aware of.

7653. Are you certain, after examining that Act, that there is not some deficiency of power?—That I will not say. I imagine not; it appeared to me that the Act was quite powerful enough, and as I say, I got

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the admission of those who were concerned, that is of the people who threw the ashes in, to say that they did it deliberately.

7654. Supposing that the authority on shore as I may say, set the conservancy authority at defiance and declined to do certain things of a sanitary nature which the board desired, what power would you give to the board of enforcing its edicts?—I would give them the power of doing the work, and charging the cost of it on the rates.

7655. Would you give the power to the Secretary of State in case of a dispute between the authorities on shore and the conservancy authority?—I do not think that the Secretary of State would like it; but somebody must have the power. There must be I suppose some referee.

7656. You would probably recommend the Secretary of State as the most convenient referee being officially responsible?—The truth is that I have been talking it over with the Under Secretary of State, and they seem to think that in the Home Office they have got quite as much to do as they can possibly manage, and if you are going to throw all this mass of references upon them it will of course be a very great burthen; I am not certain that it would not be much better to make a certain local body a body paramount in the locality, and not admit of appeal.

7657. Do you think it is possible to get a conservancy board really strong enough and active enough to carry out those sanitary laws?—I think you might. It would be a difficult thing in Lancashire I suppose, more difficult probably than in any other part of the country, there are such immense local influences on the part of the manufacturing body; but I think even there you might do it.

7658. You made some reference to the contemplated return to the river Thames there having been already an inquiry, and an Act passed, may I ask what further duties devolve upon the Commission with reference to the Thames?—It is not only the Thames, it is the whole of the rivers that come into the Thames. We shall be called upon to report upon all the tributary waters, for instance, I am now acting as arbitrator between the conservators and different people on the Thames, and I find that the Act gives the conservators only power within three miles of the Thames.

7659. Then the upper waters of the Thames are still beyond the jurisdiction of the conservators. They only go up the river as far as Cricklade?—They go very nearly to the top.

7660. The Thames does not take its origin there, does it?—No, but not very far from there, only a few miles above.

7661. Do you propose to consider the question whether the area of the authority of the conservators should extend higher up?—I think it should take in the whole valley.

7662. And the tributaries as well?—Yes, the valleys to the right and left, and all the highest waters too, from the source of the Thames to the tideway.

7663. Do you think it is very desirable that where you have a storage reservoir in the immediate neighbourhood of a town, that reservoir should be covered?—If it is in the town, but if you consume your smoke, I do not think it is necessary.

7664. But assuming that smoke is very imperfectly consumed, and that the emanations are of an injurious character, do you not think it very important that reservoirs for the storage of water should be covered?—Yes, where they are within a populous district I think they should be covered.

7665. In the case of the Lee River Bill, evidence was given to the Committee, describing the action of the air upon polluted water, and we were told that water which at a certain point was polluted by sewage becomes admirably pure after having passed some miles exposed to the air. Do you attach much importance to that?—No, we have been making experiments with reference to the river Irwell, and I believe it to be an entire mistake. I believe the conclusion to which the chemist attached to my commission has come, is that water which has once been polluted by sewage can never be made fit to drink, unless by the process which God employs, that is, distillation. I do not think that filtration, or anything of that kind, can make it fit to drink.

7666. But filtration may make it so far pure, may it not, that it ceases to be poisonous to the atmosphere as it flows along the valley?—Yes, to this extent, that it will not affect the eye or the nose.

7667. I presume that in your report of the evidence touching the Lancashire rivers there will appear abundant information respecting Widnes Dock and Runcorn?—Yes.

7668. (*Lieut.-Col. Ewart.*) Subject to engineer arrangements and the provision of the necessary funds, is it possible for large towns to dispose of their sewage without polluting rivers, and without danger to health?—Yes, certainly.

7669. Stating the matter briefly, the Thames and the Lee Rivers Acts provide a system by which the conservators put a pressure upon the local authorities, and they have power to enforce their notices by fines; would you go beyond that with respect to the relative position of conservancy boards and local authorities?—Yes; I do not see that your fine does any good at all. I should give them the power of enforcing the operation of any particular measure which they might think best adapted to the place; that they might feel perfectly certain that they would have to carry it out, and if they refused to carry it out, I should not fine them, but I would get it done, and charge them with the cost.

7670. At present is there not a fine of so much a day, which can be continued?—Yes, there are several instances that came before us of a neighbouring proprietor complaining, and going to the Court of Chancery. Blackburn is an instance: Sir William Feilden complains, and with justice, that the state of the river flowing down from Blackburn just in front of his house, a beautiful river if it was clean, is such that he cannot reside there, and he has had an injunction issued against Blackburn to abate the nuisance, but they do not know how. They have made experiments with lime, and so on, but the river stinks rather worse than it used to do. That has put them to great cost, but it is utterly useless, and the smell renders Sir William Feilden's house uninhabitable. Such is the state of things, and one sees no end to it, only that the people of Blackburn are now prepared to face the difficulty in another way—they are waiting for our report to suggest facilities for getting land for irrigation.

7671. It has been stated that towns like Manchester experience a great difficulty in getting rid of their sewage by main drains, on account of their not being able to get any land in the immediate neighbourhood, and that they cannot go beyond their immediate neighbourhood, because of other towns. Do you see any difficulty in arrangements being made with those other towns?—I see no difficulty in the case of Manchester at all, because they have got the whole of the land below them.

7672. And even if there was not land, and another town joined immediately, could not it be done by arranging for the combination of towns for drainage purposes?—I see no difficulty in doing it at all. At Bolton they are prepared to meet the difficulty. They would, under common and ordinary circumstances, let the sewage descend by gravitation, and spread itself over the land below them, but they say, we cannot spare the water; and that is one of the greatest difficulties that you have to deal with in Lancashire. They are prepared to pump the water against the face of the hill beyond the town, in order that when they have purified the water, they may get it back again for their trade purposes into the river.

7673. (*Mr. Shaw.*) With regard to the infant mortality in Lancashire, did you ever hear it assigned as one of the causes that there is a great deficiency in the supply of good milk, that the lower classes cannot obtain that which is the proper nourishment for

young children?—I never heard that. I do not think that it is likely to apply more there than in any other town. I never found a town yet where milk was not largely diluted with water. I tried it even in Sydney, and we found that the minimum was 25 per cent. of water, and the maximum 50, in the case of milk that was taken about in carts.

7674. (*Mr. Bircham.*) We have had it suggested to us that action on the part of rural districts might be assisted or procured by itinerant inspectors of good calibre, going through the country, and making their remarks upon the state of things, and giving advice locally, does that appear to you as likely to work well?—I should say not. I never found a farmer at all anxious to take advice if it was given to him.

7675. Suppose a remark is made upon parish A. of the state of things in it, and advice given, and that when the inspector comes again at another period, he finds things either in the same condition, or but little improved, but that in other parishes next to it, there is an improvement, and those reports are published, would that be likely to have any useful effect?—I do not think it would in the least. At Barking, where a company has been carrying out the utilization of sewage, the farmer stands, and looks over his hedge, and says "Here are wonderful crops," but not a bit does he take the sewage or ask for it.

7676. You would arm the river conservancy boards with absolute powers of excluding from rivers what in their opinion is noxious?—Yes.

7677. Would you give them authority to consider in individual cases whether what was proposed might or might not be permitted?—Yes, I think that they should be a court of reference, and that plans should be submitted to them for their approval.

7678. Would you arm them with some standard of purity so that they might say, this must not be done, but that may be done?—Yes, I think there ought to be something of the kind. With reference to the conservators of the Thames, I can speak feelingly upon the subject, because I am living on the banks of the Thames, and I think it a great hardship that I cannot get the conservators to say whether water of a certain standard of purity will be admitted or not.

7679. There will be crucial instances presented when sewage irrigation becomes common. You will have it at a safe distance from the river, you will have it nearer, where it will become unsafe, and nearer still where it will be positively obnoxious, and then the Conservancy Board would declare what in those instances might or might not be permitted?—Yes. We are making experiments at Woking, and are going to propose to the Government that they shall be carried on elsewhere to see how far sewage water must be allowed to travel over land before it can be considered to be purified. We want to cleanse the water which has been employed for the purposes of sewage, and we want, if possible, to get the maximum profit from the sewage, but we find that the two objects very often clash, and that the sewage is not cleansed, that it is brought as you say too near the edge of the river, and passes uncleansed into the river.

7680. All those things must have reference, must they not, to the condition of the soil?—Yes, to a certain extent; but not so much as one might imagine.

7681. At all events there would be a general power adapting itself to the special circumstances of each case?—Yes.

7682. I think you suggested the constitution of a county board, consisting of the Lord Lieutenant and others. I did not quite catch who or what the other members were to be?—I cannot see my way yet to the nomination of other members of the board; but what I want is a body consisting of a powerful, well established, well recognized head, and four others, whether appointed by the Crown, or whether appointed by the local authorities, or whether by election I am not prepared to say as yet.

7683. You alluded to the Drainage of Land Act, 1861, and the commissioners of sewers there mentioned are appointed by the Crown; does not that appear to be, for purposes of this kind, the proper authority to appoint them?—I think so; it seems to me at present to be the best.

7684. Are you of opinion that commissioners or inspectors who might have the final charge, as it were, of seeing that the local authorities did their duty, would act as efficiently if they themselves were connected with the locality as if they were entire strangers to it?—I think they would, after a time. If you take any small locality or any one county, without comparing it with other counties or without bringing them under the operation and pressure of the public voice at all, I daresay that would not be the case; but I think that when they found that it was generally the case throughout the whole country it would be different.

7685. There has been a bold report made upon the Aire and Calder by your predecessors; do you think that any report of that kind would have proceeded from local authorities or from people connected with the locality?—All that you have got from the Aire and Calder report is merely certain statements of evidence; there is no suggestion in it. We have got yet to work it out; we are taking the evidence as evidence of facts, upon which we are going to draw conclusions.

7686. Let me refer you to the case of the Lee, where the matter was worked out as well as evidence taken; would the kind of authority which produced that report, or one connected with the locality, be, in your judgment, better for making such an examination and report?—By whatever name you may call the sewer commissioners, I do not at all expect them to report as to particular nuisances; they will make the suggestion; others will carry that suggestion into effect.

7687. There is this analogy, that you must have fearlessness and independent action in each case if you would have it work well; my suggestion therefore was whether it was consistent with your experience that more was to be hoped for from entirely independent officers rather than from officers connected with the locality?—Putting it in one way, of course an independent man, a man who has no connexion with the locality would be most likely to give an utterly and totally unbiassed opinion upon local abuses.

7688. And it comes to this, does it not, when a selection is made between a county board and a central authority in London, and officers radiating therefrom?—My experience abroad leads me to object to central authorities, because I feel that your local work is generally speaking badly managed under a central authority, indeed that the interests of the locality are generally speaking overlooked. You act upon some sort of general principle which applies equally to Yorkshire and to Cornwall and so on, but the two do not harmonize, the circumstances are so different.

7689. But you act with accumulated experience?—My feeling is that you do not get it—you get a biassed opinion.

7690. (*Mr. Richards.*) Do you think that the chairman of quarter sessions would be well substituted for the lord lieutenant?—I should think not. I should not think that he carried anything like sufficient authority.

7691. But might he not be conjoined with a certain number of magistrates chosen to form the conservancy board?—No, certainly not. The fact is, all those people are magistrates who are connected with all those nuisances to which I have referred. As far as my knowledge goes, at all events, they are the very manufacturers of the nuisances.

7692. In many cases is not the lord lieutenant himself in the same position?—Perhaps he may be, but he stands out by himself, and he would be rather ashamed if it was said, My lord, here you are making this nuisance, and you put your face against the cleansing of it.

7693. But if you are in favour of a local board who is more likely to be independent than the chairman of quarter sessions?—I do not know, but I think that a

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man placed in a higher position would carry more weight and more authority; and besides that, I know that the chairman of quarter sessions has very many other duties to perform. However, when I am saying that, I should remark that I have not seen in any chairman of quarter sessions such an amount of influence as would lead me to suggest him as the head of such a board.

7694. What body do you think that could be chosen locally would be able to control the Bridgewater canal offences which you have mentioned?—I do not know whether the lord lieutenant is a shareholder or not or has any interest in it, if he has he ought not to be allowed to be on the board of course; but I do not know that there would be any controlling power very much required in that case. They have got their own Act of Parliament, or whatever it may happen to be, and this executive authority would have the carrying of it out and the enforcing of it.

7695. You find in fact that there is generally the power existing, but there is an absence of will to carry that power resolutely out?—I find that Parliament has given all the power, but you cannot exercise it.

7696. Then the difficulty is to choose a body to carry that power into effect?—Yes, that is my opinion.

7697. With respect to the discharge of hydrochloric acid into the river, is that done to a very large extent?—To a very large extent indeed. When I say very large extent indeed it is more particularly into the Sankey brook at St. Helens and Widnes, that that is done. It is not a very common trade, but wherever it is so done, the muriatic acid is discharged into the brook, and the alkali waste is heaped up, producing sulphuretted hydrogen, giving out most offensive vapours, and making the water of the stream most filthy.

7698. Have you satisfied yourself from the inquiries on your commission that the impurities that flow from soda waste and hydrochloric acid can be almost neutralized and that they might run into the river without their doing any great injury to the town below?—The noxious quality would not only be neutralized, but you would do away with it altogether. You would get rid of the sulphur from the alkali waste, and you would get rid also of the acid by certain processes which are remunerative processes.

7699. I think you spoke of the water not being sufficient to enable the manufacturers to carry out the process of purification?—No; what I stated was that in Lancashire you have got such a numerous population crowded into a given area that you have not water enough for the purposes of that population.

7700. Do you mean to put before the Commission that there is not water sufficient in Lancashire for the domestic wants of the population?—No; I included both the domestic and the manufacturing wants of the population. When I say that the water is not sufficient, I refer of course to the existing state of things. I do not mean that it may not be made sufficient by various processes, and by retention of the flood water, but the two great difficulties that we have to deal with in Lancashire are the scanty supply of water and the enormous body of ashes. Every 8,000 tons of coal gives 1,000 tons of ash, and that has to be got rid of somehow or other.

7701. You have given your opinion that although water may be purified sufficiently for trade purposes and for common household purposes, it would not be purified sufficiently for drinking purposes?—I do not think it would.

7702. Would you allow the water that had been purified to run into the rivers, although not in a state fit for drinking?—That depends upon whether you choose to take the water from the river to drink afterwards, but you cannot help yourselves; the water must go into the rivers.

7703. You would suggest, as it has been intimated by Mr. Bircham, a certain standard of purity, and when that standard was reached you would let the water run into the river, leaving people to drink it or to leave alone, as they think best?—Yes, you cannot retain it; it must go down into the outfall.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 29th July 1869.

PRESENT:

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

The EARL of ROMNEY.
SIR THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
FRANCIS SHARP POWELL, Esq.
BENJAMIN SHAW, Esq.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

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(62.) Dr. WILLIAM STEWART TRENCH examined.

7704. (*Chairman.*) You are medical officer of health at Liverpool, are you not?—Yes.

7705. When were you so appointed?—In 1863.

7706. Under the provisons of what Act?—Under the local Act of Liverpool of 1846.

7707. What are your duties under that Act?—The duties are defined in the local Act. It states that the medical officer shall "inspect and report periodically "on the sanitary condition of the said borough, "ascertain the existence of diseases, more especially "epidemics, increasing the rates of mortality, and "point out the existence of any nuisances or other "local causes which are likely to originate and maintain such diseases and injuriously affect the health "of the inhabitants of the said borough, and take "cognizance of the fact of the existence of any "contagious disease, and point out the most efficacious "modes for checking or preventing the spread of "such diseases, and also point out the most efficient "means for the ventilation of churches, chapels, "schools, registered lodging houses, and other public "edifices within the said borough, and perform any "other duties of a like nature which may be required "of him."

7708. Are there powers conferred under other local Acts besides the one that you have mentioned?—We act under other local Acts. In sanitary matters we act under the Act that I have already quoted of 1846 and the Sanitary Amendment Act of 1854.

7709. Mention the local Acts under which you act before you mention the general Acts?—The next local Act that we act under is a Sanitary Amendment Act of 1864.

7710. How far have your duties been enlarged or

altered under the requirements of the general Acts?—Everything that relates even indirectly to health is included in my duties now. For instance, during the cattle plague the regulation and inspection of cattle came under inspectors under me. The inspection of bakehouses comes under me, and anything that is even indirectly connected with health.

7711. (*Mr. Powell.*) Are you cognizant of bakehouses under the public Act or under a private Act?—Only under the public Act.

7712. (*Chairman.*) Will you state your opinion upon the working of the sanitary laws for the removal of nuisances?—My own experience is that the Sanitary Act of 1866, in that clause which refers to the removal of nuisances and the obligation of the local body to proceed under threat of action from the Secretary of State, is so far unjust that it gives them no power to be just to the people against whom they act. I may mention that under the Nuisances Removal Act of 1855 the local authority was not required to take action unless he were convinced, and if he chose he could shut his eyes and not take action at all. Under the Act of 1860 power was given to any individual to become a complainant before the justices; but I am not aware of any cases in which such power was ever exercised. Then came the Act of 1866, and that obliges the local authority to take action. I would state broadly that you seldom can take action against nuisances occasioned by the position of premises without being at the same time unjust. I have taken action, not under the Act of 1866, it is true, because I had begun before the Act was passed, but I have taken action in the removal of privies which were in a position injurious to health, and I have as medical officer ordered the conversion of 14,393 privies into waterclosets. The pressure of that cost was so great that the council of Liverpool were really obliged, from a feeling of equity, to assist the owners, and they did so by what is called the surplus fund of the borough, and they also strained the law so as to regard the drain from the privy to the main drain as coming within the designation of "public work." I have here a statement on the subject, showing that the extent to which they did assist was about 40,000*l.* They were so anxious to have the power to assist, that when the Sanitary Amendment Act of 1868 was brought forward I was authorized to try and get introduced into that Act a power to enable any local authority to pay the cost of such conversions. I endeavoured to get a clause to that purpose added to the Act of 1868, but I found when I came to London that the bill had passed from the House of Commons and gone into the House of Lords, and being a money clause I was told from Mr. Hardy that it could not be admitted. The health committee not only did that, but as a preliminary step to future action they resolved, firstly, that when I certified a privy to be injurious, the remedy should be by waterclosets, and then they go on to say that, "compensation should be made to the owners of privies "erected according to the requirements of the "council at the time of erection," that is, that they would pay for all the waterclosets that had been erected so as to enable them to give compensation in those cases where I was ordering the conversion. It was to be at this rate: that they would give 3*l.* 10*s.* for every syphon watercloset that I should order to be erected; 5*l.* 10*s.* for a single trough watercloset, and 7*l.* 10*s.* for a double trough watercloset. I may mention that the principle of the local body paying at their option, when they see that it is in equity that they should do so, is to my mind sanctioned by the 58th section of the Public Health Act of 1848, which gives the same power, with regard to offensive drains as I would wish applied to all nuisances. It says, "Provided, always that the said local board may "order that the whole or a portion of the expenses "incurred in respect of any such last-mentioned "works be defrayed out of the special or general "district rates to be levied under this Act, and in "case of any such order the whole or such portion "of the expenses as may be mentioned therein shall "be defrayed and levied accordingly." It appears to me that after having been extremely coercive upon the owners it relents here, and gives power to the local authority to be just. I think that there is a similar spirit of justice in the Health Act of 1866, the 21st section, where it says, under "secondly," that "where the "person causing the nuisance cannot be found, and it "is clear that the nuisance does not arise or continue "by the act, default, or sufferance of the owner or "occupier of the premises, then the nuisance authority "may itself abate the same without further order, "and the cost of so doing shall be part of the costs of "executing the Nuisances Removal Acts, and borne "accordingly." I think there is such a spirit there that a word or two more might have met all that I want given to the local authority, that is power if they wish at least to be just.

7713. (*Mr. Powell.*) The same principle is adopted in the the 22nd section of that Act, in the last part of it?—Yes, a power of help. What I want to lay before the Commission is what I have felt myself. I had a duty to perform; I saw that duty pressing most heavily upon poor people; I saw no way of escaping from that duty but shutting my eyes; it was either that or ruining these people, and the local authority could not help me, and there was no power in the law to enable them to be what I term just, if they wished to be just.

7714. (*Chairman.*) Do those expenses fall upon the occupiers?—No, on the owners.

7715. The owners generally are not very poor persons, are they?—Yes, they are. In a town like Liverpool a person frequently owns the house he lives in, and tradesmen make provision for their families by leaving two or three cottages, the gross rental of which will be 12*l.* or 14*l.* each, and the expense of erecting a watercloset to each cottage is of course the straw that breaks them down.

7716. How would you have the merits of each case decided?—My own idea is that the Commission might establish such an authority as an authority of equity in all these cases; that is, to regulate as to how much should be given by the local authority, or what assistance should be given. There might be a court to decide that, but it would have been quite sufficient in Liverpool if the town council had had the power.

7717. The point to be decided, as I understood your view, would be the degree of culpability of the person creating the nuisance?—Yes, that would be the point.

7718. Would such a rate out of which individuals might be recouped be a special rate or a general rate?—It would be the general sewers rate; that I think would be the best. We have no borough rate in Liverpool. We are rated for every special purpose, but I should think that this could be done under what is called in most towns the borough or general sewers rate.

7719. Are there many special rates in Liverpool for local or individual cases?—The rates are special.

7720. Special in what sense?—Special under Acts.

7721. Have sums been voted by the Liverpool sanitary board for special purposes, such as the improvement of overcrowded property?—That we do under a special Act also, the Sanitary Act of 1864.

7722. Was it for that special purpose?—It was for that special purpose.

7723. What is your opinion as to the best means of disposing of the refuse of towns?—I think that that is a question which can never be ascertained in the abstract or without a knowledge of all concurrent circumstances. I feel perfectly certain what is the best way in Liverpool, where we have an estuary like that of the Mersey; but with regard to what it may be in Holland, where in certain places you cannot raise the sewage so as to run it off, or in country places, I have never formed an opinion as to what might be the best abstractedly. My own feeling is that in Liverpool waterclosets are the only means.

7724. And do you think that the law rightly

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insists upon the use of waterclosets?—I think that in Liverpool it does.

7725. In Manchester they are of the contrary opinion, are they not?—Yes; in Manchester they are most illogical. They speak against waterclosets, while their own best houses, the houses of the rich, spoil the river.

7726. Do you think that a general law should enter into such details?—No; I think certainly not.

7727. I suppose a double system is more expensive than either system carried out thoroughly?—That is my impression. It has the evils of both and the expenses of both.

7728. And they do not fall in together?—They require double working.

7729. Then your opinion is that the local authority should have the power to adopt whatever system it thinks right, and should carry it out by its own officers?—Yes, I think so. The local authority at present, as I understand the law, have the power to direct waterclosets or any system they like in new buildings. They have the power, if conveniences are injuriously placed, to have them altered as they like, either by earthclosets or otherwise. Then I would give them the power to meet the third class of cases, that is, cases which are not by reason of position manifestly injurious to health, but which necessitate a double system merely for the convenience of a few.

7730. What are the present regulations in Liverpool as to inhabited cellars?—Under the Act of 1842 the nature of cellar habitation was prescribed thus: Cellars 7 feet high must have 2 feet above the level of the ground. In 1846 the Act was altered, and they required 3 feet above the level of the ground; but a proviso of the Act arranged that, wherever the owner had claimed the cellar as habitable under the Act of 1842 it should be deemed habitable for all time, and therefore we have in Liverpool illegal cellars under the Acts of 1842 and 1846, and we have cellars which are legal under the Act of 1842, and we have cellars which are legal under the Act of 1846, which is very similar, almost *totidem verbis* with the general Act of 1848.

7731. (*Mr. Powell.*) You say that the cellar must be 2 feet in the one case and 3 feet in the other above the line of road, what was the miminum distance from the line of road?—There is an area prescribed in the Act of 1846; "2 feet above the level of the road" here means that the cellar must project above the road 2 feet.

7732. What must be the miminum width from the roadway to the house?—That is mentioned in the Act of 1846, it is what is called the area, it is in that Act the same as in the general Act; the area is specified by the Act.

7733. (*Chairman.*) Are there constant complaints being brought by the sanitary inspectors before the justices of offences against this regulation?—In regard to the occupation of cellars constantly. Ever since the Act of 1846 it has been the great sanitary fight of Liverpool, to keep the poor people from occupying cellars in courts, and cellars which are altogether illegal.

7734. And what difficulty do the justices find when such complaints are brought before them by the sanitary inspectors in enforcing the law?—When the offence of cellar habitation is proceeded against, action must lie against either the owner or the occupier. If you proceed against the occupiers you proceed against people in the lowest state of wretchedness, who are prepared to go to prison if you fine them, and be very glad if you will send them, and who will go to the workhouse if they can be taken in; and these people present themselves in their wretchedness before the magistrate, and they are really above the law; you cannot punish them. Then, if you proceed against the owner of the property, he tells you, "I do not let this cellar; I receive no money for this "cellar. I cannot keep the people out of the cellar, "what am I to do? Are you going to punish me be-"cause I have no power?" In reality it is a difficulty The one class are above the law by their very poverty and the other class are perfectly innocent of the offence because they are trying to get rid of the people, and they get no rent from such people.

7735. Do you mean that their rents are not paid?—An illegal cellar habitation they dare not charge rent for. They let the house above, and the cellar is open, and the people go into it.

7736. Are they a sort of squatters?—Yes, they are squatters; and what will astonish many who do not know a place like Liverpool, the owners of property have to shut up dozens of houses, sometimes half or quarter of a street of houses to get rid of squatters.

7737. Might not that always be done?—The owner says, "They break through it. How am I to close it?"

7738. They might by bricks and mortar, I suppose?—They have tried that; nothing will do.

7739. Have you as medical officer stated your opinion that the habitation of these cellars is dangerous to the health of the community?—Yes, I have done so repeatedly, and when the Health Act of 1866 passed we looked (I may say "we," for it was myself and others who were interested in the matter,) with extreme delight to find as we thought power to meet the case of cellars, where it stated that where two convictions had been obtained against an illegal cellar within three months the local authority might close it at their own cost in any way that they liked. I have a strong opinion from experience that the only way of closing a cellar is to fill it in, and I asked the health committee to fill such cellars in at their own cost, which they were willing to do. They, however, wrote to the Home Secretary to know whether they would be allowed to fill in at their own cost cellars against which two convictions had been obtained within three months; and they received an answer from the Home Secretary, through Mr. Tom Taylor, that "permanent closing does not mean permanently filling in;" I think those were the words. However, he prevented us from doing it.

7740. Does not the Artizans and Labourers Dwellings Act of 1868 give more power in such cases?—The Artizans and Labourers Dwellings Act gives you power for the removal of houses or alteration of houses injurious to health at the cost of the individual, but it does not touch cellars at all in this way; by no means could you under that Act declare a whole house to be in a state injurious to health because it possessed an illegal cellar, or a cellar unfit to be used as a separate habitation, because there are none of your own houses which have not illegal cellars; beer cellars and others are all illegal, if occupied as sleeping apartments. The only illegality is occupying them.

7741. But though it does not expressly name cellars, do not cellars come under the general term of "premises"?—It merely means that they possess an illegal cellar, or a cellar unfit to be used as a bedroom; all that the Act of Mr. Torrens would go to is, that this house has an illegal cellar. The occupation is a separate offence.

7742. (*The Earl of Romney.*) Is not the illegality in the occupation?—Yes.

7743. (*Chairman.*) If it were a nuisance it would come under the provisions of the Artizans Act as unhealthy premises; you could deal with them under that Act, I suppose?—We could not under Mr. Torrens's Act, nor could we separate the cellar from the premises generally. I will endeavour to illustrate my meaning in regard to that. A house under Torrens's Act is declared to be in a state or condition injurious to health. The local authority proceeds against that house; the answer of the owner is "What is there unhealthy in it, sir?" The reply of the local authority is, "It has a cellar." "Has not your house a cellar?" would be the answer. It is the occupation which is a distinct offence, and which the owner cannot prevent any more than you can prevent a squatter settling himself.

7744. But irrespective of its being a cellar, or even

of the local regulations as to the construction of a cellar, may not the local authority of Liverpool proceed against any kind of premises which has become a nuisance, and alter it structurally or in any other way?—Quite so. But if they did that they would break their own law. By altering its structure they would be breaking their own law of 1846, and the statute law of 1848, which prevents you from making an illegal cellar in a court afterwards legal; you have no power to do that.

7745. Your opinion is that the local Acts have actually legalized that which you consider in itself unhealthy?—Decidedly, that is my opinion; for I consider that cellars built according to our local Acts of 1842 and 1846 ought not to be used as separate habitations.

7746. So that, though it may become unhealthy in other ways, the Artizans Act is limited by the provisions of the local Acts?—I do not know that that expresses all I mean.

7747. I understood you to mean that the Artizans Act was limited in its operation in Liverpool owing to the local Acts, which said that if a cellar was constructed three feet above the ground it should be legal?—I meant quite the contrary, the cellars which are illegal are in courts or have not two feet above the ground. Torrens's Act would enable me to reconstruct them, but that the owner would do at his own cost, only that the law prevents him, and prevents the local authority from reconstructing them so as to make legal what was before illegal. The object of the law is to prevent such cellars from being afterwards altered so as to be made in conformity with the provisions of the local Act of 1842.

7748. But you consider that if a cellar in Liverpool is 3 feet above the ground the local authority cannot alter it structurally, though it is a nuisance in your opinion under the Artizans Act?—I do not think they can. What we should do in a case of that kind, and what I have done, is to make a declaration that from certain circumstances it is injurious to health, and ask for the closing of it. We should declare it to be injurious to health, and under the order of the justices get it closed.

7749. Was there not a case in which a house agent of the name of Hughes dealt with cellars effectually by closing them?—There were three plans tried in Liverpool of closing cellars. In some instances they built up the outer door and window, leaving communication, however, with the sitting room of the cottage; the consequence of that was, that the people still used the cellar, although it was closed up and had no proper ventilation from outside; they used it for receiving vagrants occasionally, but more frequently it became the source of nuisance from their keeping fowls and other things in it. Then owners tried to close a cellar by building the outside, and also boarding up the communication between the sitting room and the cellar; in those cases the tenants absolutely bored holes or lifted the boards which had been put there, and made the cellar into a privy; and the only instance in which I myself ever knew a cellar to be effectually closed was by Mr. Hughes who filled it up with rubble stone.

7750. What remedy would you propose for this defect in the power of the local authority?—I would give them direct power to fill up, in any way they thought proper. The language of the Act is very strong, and it at first appears to give us that power.

7751. What power have the local authority in Liverpool, by byelaws, for regulating the space about new buildings?—We have adopted the general Act of 1858 in reference to that, and follow the general custom of the country.

7752. Have those byelaws been enforced, and have they improved the buildings?—Yes, they have done a great deal of good.

7753. Is it discretional now with the local authority what space to require?—There is a discretionary power left, but it is seldom exercised. The space required is generally insisted on, and the discretion is never exercised I may say without the consent of myself as a medical officer of health.

7754. And is the required space made to apply, not only to new dwelling houses, but also to factories, workshops, warehouses, and stables?—No; the Act gives them power to frame byelaws for buildings, but they have in their byelaws restricted it to buildings occupied for human habitation, instead of applying it to all buildings in the town; and they are also advised that their byelaw does not apply to additions to houses built before the adoption of the byelaws; thus a man may add and add to his house in very crowded parts of the town until he has built over the whole of the existing area, and you cannot stop him.

7755. Is that the case not only with additions to old buildings, but also with additions to new?—No, not to new, only to old buildings.

7756. Then you think that the power of regulation should apply also to alterations of old buildings?—Yes, I think it is more important. By a law affecting new buildings you make houses dearer, and you tempt people to make additions in the very crowded districts of the town, so that you apply the remedy in the wrong place.

7757. Have you anything further to tell us about the Liverpool Sanitary Act of 1864?—The Sanitary Act of 1864 is the Act upon which Mr. Torrens's Act was framed. I may mention what we have done under it. It has enabled me to order the total demolition of 424 houses which were in a condition injurious to health, the partial alteration of 47 houses, the demolition or structural alteration of 339 outbuildings including privies, and the construction of 644 trough or syphon waterclosets. The principle of the Act differs from Mr. Torrens's in one particular. Mr. Torrens's Act gives the same power to the medical officer to declare a place injurious to health, it gives power to the local authority to take action. In Mr. Torrens's Act the local authority serves a notice upon the owner of the property said to be injurious, and the onus rests upon the owner of that property to prove that it is not so through any laches or default on his part, or in fact that his property, if made unhealthy, is made so by circumstances over which he has no control.

7758. Have all these acts of demolition and alteration led to any opposition, litigation, or appeal?—None whatever; it has gone on extremely smoothly. We have only had one case before a jury and one case in which the matter was brought before the justices. In the case where the jury were called it was because one of the owners of the property was out of the country; and where the magistrate was asked to interfere it was because the owner wanted to have an iron railing as a division between his property and another.

7759. By "jury" do you mean a special jury?—A special jury for the purpose, as prescribed by "The Lands Clauses Consolidation Act, 1845."

7760. Your reports are always laid before the grand jury at the borough quarter sessions, are they not?—Yes; the proceeding of the Act of 1864 is this, the law calls upon me to take the initiative, and to report to the council on any premises which, by reason of their condition or situation, are in my opinion injurious to health. I am required at the same time to state the extent, nature, and character of the improvements required. Copies of my report are forwarded to the town clerk and to the clerk of the peace, and by them the report is brought before the council and the grand jury of the borough quarter sessions. The town clerk then serves every owner of premises affected by the report with notices stating the nature of the alterations required, and the time when the grand jury will inquire into the matter. The grand jury, by deputation from their body, inspect the premises. In doing so, they are attended by myself as medical officer, and by the borough surveyor; and they receive any evidence offered, and report as they think desirable. Upon that report is framed their presentment, which is to be carried into

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effect at the public cost from rates specially levied for the purpose. The borough engineer then prepares plans and specifications of the work required to carry out the presentment. Notices are again served on the owners of premises, telling them when and where they may inspect these plans and specifications. If any owner objects to the works he may go before the the justices and discuss the propriety thereof, and the justices may make such orders as they think fit. The corporation and the owners of premises are to come, if they can, to some mutual agreement as to the amount of compensation to be paid to the owners for the alteration or demolition of the premises. If they cannot agree two valuers are to be appointed, and the decision is to be left to a jury.

7761. (*Lieut.-Col. Ewart.*) Is the sewage at Liverpool discharged into the Mersey near the town?—Yes.

7762. Are the outfalls above or below the low-water mark?—They are above the low-water mark.

7763. What provisions have you made for the ventilation of the sewers or the drains leading into them?—We ventilate by large pipes leading direct from the sewer and carried above the houses. The pipes have at the top what is called an archimedian air extractor which moves by the wind, and it sucks out the air. We have of these pipes, which have been specially erected for the purpose, about 1,020. We also have in communication with the drains ordinary drop spouts, which run up along houses, but they have no archimedian ventilator at the top, and they are not allowed to be used when there is any window near. And we have three or four large ventilators in communication with larger buildings and furnaces, but the principal mode of ventilation is by the ventilator with an archimedian air extractor at the top.

7764. Are those iron pipes?—Iron pipes.

7765. And are those ventilators put up at the expense of the inhabitants, or as part of the general works?—As part of the general works. It is done by the council. At every change of level there is a ventilator of that kind put up and connected with the drains.

7766. So as in fact to provide for the escape of the gases at the highest level?—Yes.

7767. And having provided for this ventilation, are the drains trapped throughout?—The drains are trapped throughout.

7768. And as the result of your experience do you recommend this system of ventilation?—I consider that it is the very best that can be used. I think it very much better than what is adopted in London; in my own experience I may mention, however, that although we take what we consider the extremest care to prevent the escape of gases from the drains into the house, we believe that the drains of Liverpool, as a general rule, contain comparatively little mephitic gases for the fall is so great that the sewage from a house at one extreme point of the town reaches the river in 60 minutes. From the time it has left the house to the time it reaches the river is calculated by the borough engineer, by experiment, to be about 60 minutes. We have so much of flushing, and then the very abundance of our waterclosets ensures a thoroughly quick passage of the fæces through the drains. The experiments that have been made by the borough engineer through the man holes, in testing for sulphuretted hydrogen, have proved that the amount of these gases in the Liverpool sewage is really very little. At the same time, we adopt all the means in our power to ventilate the drains.

7769. What is your system of flushing?—There is a drawing which will show it (*producing a drawing*), and there is a pipe made for conducting it from the court (*pointing to it*).

7770. What is your arrangement at Liverpool as regards the inspecting of nuisances? who are the people employed?—The town is divided into 16 divisions, and there is an inspector to each division. They are under the chief inspector of nuisances. Then there are attached to this staff of 16, two, what are termed, prosecuting inspectors. When a nuisance is found to exist, we will say in number 1 district, the fact is notified at the office, and then the prosecuting inspector goes and makes himself cognizant of it, so that on the Wednesday when the cases are tried before the justices only the two prosecuting inspectors come; they are prepared to give evidence on the whole of the nuisances that have been detected by the 16 local inspectors. Then there are inspectors also attached to the nuisance staff, who look after meat and fish. They are professional butchers and fish dealers. There are four of them who attend the markets and the different shops throughout the town. Then there are also eight inspectors, who look after bakehouses, lodging-houses, and sub-let houses, or houses arranged as sub-let under the Act of 1866.

7771. And what class of persons do you employ for these inspectorships of nuisances connected with health?—I can give no better answer than to state that we pay 30*s.* a week and provide livery; and if there is a vacancy the applicants come by hundreds and they can all read and write; as for the kind of people, of course it is the person who has most interest that gets it. The inspectors who look after lodging-houses must be married men, who have served in the police force.

7772. Have you tried the employment of the borough police at all?—The borough police assist in everything of this kind by sending information to my office or to the inspector of nuisances office whenever they find anything that wants attention, but they do nothing more. The notice comes through the head constable of things being found wrong, and then the prosecuting inspector proceeds against the person causing the nuisance. We do not allow the police to come in and give evidence against these people, nor do we engage the police to find out nuisances. You will understand that Liverpool is somewhat different from most towns. We are a town of courts; a street runs straight down, and from it branch a dozen or 20 courts. If the policeman was looking after nuisances he would be eternally in these courts, and thus neglect his proper duties. That is one of the reasons why they are not employed as sanitary inspectors.

7773. Do you find that the inspectors you employ are sufficiently independent of local influence and local interest?—I think they are. The only persons that they need care about are their own masters in the committee. I never heard of one influencing them, and I am sure that if I heard it I would very soon make it known.

7774. (*Sir T. Watson.*) This system of inspection that you have been mentioning includes, I apprehend, the report of any preventable disease which may have shown itself?—These inspectors have simply to carry out the Nuisances Removal Act. It is not specially for disease, as we would say, or because disease has shown itself, but as a general survey to say that there are no nuisances, whether nuisances *per se* or nuisances injurious to health.

7775. How would you know if any preventable disease began to show itself in Liverpool?—The returns come to my office from the parochial authorities mentioning every case of fever or contagious disease which is attended by them, and of course we get our lists from the registrars of deaths; but the parochial authorities send to my office a list of all contagious diseases, that is preventable epidemical diseases which have occurred during the week. The action that I take upon them is under the Act of 1866, which gives the local authority the power to order the cleansing or purification of the house. Therefore as soon as I receive their list I at once from that very fact ask the health committee to allow me under the Nuisances Removal Act to issue a summons to have the places cleansed.

7776. Are these returns only made to you weekly?—The parish authorities have lately made more fre-

quent returns, but we only take action weekly under the provisions of the law.

7777. So that there might be for six days a preventable disease present without its being reported to you at all?—The custom is to report weekly, and to take action weekly, but if there was such a disease as cholera prevailing, of course that would be reported daily, and our committee would sit daily. But with regard to time you are aware that we can only take action under the law; the law under which we take action is the Nuisances Removal Act, which absolutely obliges us to go before the local authority which only meets once a week. If I get the information on a Friday I cannot take action until the next Thursday, when the local authority meets.

7778. What I want to ascertain from you is whether you have the earliest information of any focus of disease, and whether you have the means of immediately applying a system of prevention?—Yes, of any focus when it comes to be such, we get immediate information, and we do act immediately. I may mention the manner in which we act immediately. The parochial board send me word, and I issue orders for the removal of the clothes at our own expense to a disinfecting apparatus. The parochial authority proceed at once to the house (when the surgeon tells them that they can do so) and apply the chlorine gas so as to disinfect it. On the Thursday the health committee are asked to give orders for the limewashing and cleansing of the house. It is only in regard to such limewashing that the owners are put to any expense.

7779. Do you ever find cholera commencing in Liverpool without being imported?—English cholera, not the epidemic.

7780. If it were imported to you from Sunderland, or elsewhere, should you have the means, to use the familiar metaphor now, of stamping it out?—I should have the power of immediately taking action. If the person were a stranger I should have the power of sending him to the workhouse hospital, but if he were a gentle person we must just run our risk.

7781. And as to purifying the man's clothes?—We have the power, and we do that. We do it in Liverpool without asking anybody; we do all the purification with chlorine gas, and taking the clothes to the disinfecting apparatus and applying heat at the public expense.

7782. Is Liverpool visited frequently with epidemic fevers?—We are never without typhus in the winter; it rages then. It lessens in the warm weather, but in the winter, when the misery and poverty are extreme, we are never without it.

7783. Might I ask you your opinion as to whether typhus fever is ever begotten by dirt, destitution, and crowding, or whether there is always some leaven in the community which may set it going?—It is a very difficult question to answer. Of course I can only state my own opinion, and that is that it is a specific disease, and that it is as much a specific disease as small-pox, as measles, or as scarlet fever, and that no person can tell why it originates in one place. We know this, that under certain conditions the propagation is so certain that the result is almost as if it were a spontaneous generation instead of finding a germ upon which to grow; but we can no more, according to my impression, account for typhus simply originating from dirt than we can for small-pox.

7784. Have you much typhoid fever, enteric fever?—In the summer months we have enteric fever, and last year we had an epidemic of enteric fever, which attacked the outskirts of the town, and the county around the town, and the only localities that seemed exempt from it were the places occupied by the poor in which we had removed all the privies and made trough waterclosets.

7785. Have you a great deal of diarrhœa in Liverpool?—We have in the summer months. It begins with extreme regularity as the thermometer rises and continues until the thermometer falls again, and is restricted almost altogether to children below five years of age. It is a great cause of infant mortality.

7786. You have a great immigration, have you not, from Ireland into Liverpool?—We have a great number of Irish coming to the town.

7787. Have you had much of the fever called relapsing?—We have never had the relapsing fever as an epidemic in Liverpool since the Irish famine fever of 1846.

7788. Is it consistent with your experience that when you have had it it has been brought by the Irish?—It was brought unmistakeably upon that occasion by the Irish, and restricted almost entirely to the Irish. But the ordinary enteric fever that we have with us does not generally take the relapsing character, and it has not the yellow tinge of the skin, the peculiar bilious complexion, that relapsing fever has; but I think that very little would make it relapsing, that is, turn it into the famine fever.

7789. Do you think that the registration of diseases is a feasible thing, as distinct from the registration of deaths?—Quite feasible if the people would do it. It is feasible and is done by some parochial authorities, and could be done by others; the only thing to prevent it is the secrecy of the doctor. The lay priest will not state the cause or nature of the illness of his patient; that is the only objection against it.

7790. It could be done by public institutions?—By public institutions.

7791. And if it were done, even though restricted to public institutions, hospitals, and so on, and if the results were published, do not you think that this would lead very much more distinctly than a registration of deaths to the discovery of what are the causes of disease, and so of the mode of preventing those diseases?—There is no doubt that it would do an immensity of good. The statistics that it would give us would be of extreme value, but at the same time no doubt they would be somewhat dangerous, because the young men who are gratuitous attendants of these public offices do not at first easily discriminate disease, and when they have named a disease there is an unwillingness to confess error afterwards if in the development it should take another form.

7792. You are familiar with all kinds of disease in Liverpool, no doubt, and with all its sanitary evils?—Yes.

7793. And you are familiar with the sanitary enactments which at present exist?—Yes.

7794. Do you think that there are many sanitary evils which are not recognized in those Sanitary Acts?—The only sanitary evil which I think is not recognized is malarrangement of families in self-occupied houses, that is overcrowding in the houses which are neither lodging houses nor sub-let houses, but what are called in Scotland self-contained houses. I do not see how we can check that evil, which is a very great one, except by making sanitary truths more known. Speaking of the time when I was in practice, and of my experience then, I could trace sickness to a very large extent among the well-to-do population to their own insalubrious arrangements, crowding the nursery, for instance, too much, putting the whole of the children into it under some foolish idea that they wanted to be overlooked by their parents.

7795. My question was not whether those evils were provided for, but whether they were recognized?—We have no power over them. I may mention that we have carried out in Liverpool probably more than in any other part of Great Britain that I am aware of the inspection of what are called registered sub-let houses; that is, houses which are not lodging houses, but are occupied by members of more than one family. I have, in consequence of the Act of 1866, registered between 7,000 and 8,000 houses. I have in my office the measurement of every house that is registered, and upon every room of every house so registered there is the number set up how many adults ought to sleep in it or occupy it. My men, of whom there are eight, go in pairs (I do not allow them to go singly) at night to these houses whenever

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there is sickness in a district, and I have an apprehension that there may be overcrowding. In fact, they go three times a week continuously, that is to say, they go at night into any of the 8,000 houses. They go into the rooms and see how they are occupied at night. I have carried the law into effect, and I must confess that when the law was first passed I did not think that I could have done it.

7796. You said just now that you had found enteric fever prevailing in localities where you would not so much have expected it, that is to say, in the not worst localities?—Yes.

7797. Have you any reason to suppose that it had anything to do with the drinking water of those places?—No, not at all. They all drink the same water, which is not from wells, but from the Rivington pike. It is catchment water. But it was clearly traced to this, that in the country at the north end of Liverpool, where the epidemic broke out, the houses of the gentry were not properly drained. They had cesspools, and the matter percolated round their houses from the cesswells.

7798. (*Chairman.*) What is the limit as to the nature of the houses that you have spoken of as being visited?—Any house occupied by members of more than one family.

7799. What term of occupation would open a house to such regulations?—There must be three families or two families residing in the house. If we find them in occupation we register them.

7800. (*Mr. Bircham.*) You would probably feel that in Liverpool the public mind was sufficiently alive to sanitary subjects, and that if you needed anything it was an amendment of the law in some details?— Quite so. I think that they want no pressing on.

7801. We have had evidence here of several town populations, large town populations too, where there is great apathy upon sanitary questions; is it your opinion that that could be removed or improved by a periodical inspection from a central authority bringing public opinion to bear upon the state of things?—I think not. I consider that with regard to the central authority they may interfere with the local authority in matters such as sewers or duties which belong directly to the local authority, but I am quite convinced that if a system of periodical visitation or frequent visitation from a central authority was established, the agitation against it would be exactly like what occurred under the Public Health Act of 1848. I know that the feeling is very strong among all that I have talked to; what they say is this, "A coachstand is a very good "institution, and we do not mind if coaches occa- "sionally come off the stand to look for work, but to "eternally have coaches driving and looking for work, "we could not stand at all." That is the illustration that they give of it. They have no objection to inspectors from the central authority being occasionally sent for when they are wanted.

7802. The analogy scarcely obtains, because the coach goes to seek work, whereas the inspector would go to report what he found there, and would only, when necessary, suggest to the people on the spot that they were neglecting their duty?—He would be of no use unless he found something. The whole establishment would cease unless they found work.

7803. However you are of opinion that if there were such an inspection, and the attention of the local authorities were drawn to the neglect of duty, that would not be an effectual or useful interference?—Not except for work which they themselves could do. The local authority has two kinds of work before it, one it has to do itself, such as sewers, and the other is to carry out the Nuisance Removal Acts and analagous Acts, that is to put into effect the law as against private individuals who are answerable for nuisances, and I believe that if the council of Liverpool had suddenly stopped and said, "Doctor Trench, we will "go to no further expense in this matter of conver- "sion of injuriously placed privies; you have cost us "100,000*l.* already, we will go no further;" the answer from me would have been, "Gentlemen, my "duty is clear. I will go to the Home Secretary," and I would have brought down the Home Secretary. But I am quite convinced of this, that when the Home Secretary had had to put that law into effect as against the widows and poor owners of this property he would have been very sorry that he had the power, because he could not have given the help which the council had the power to give.

7804. My suggestion was not that he should undertake the work, but that by his inspector's report he should bring public opinion to bear upon it?—I am speaking of Liverpool. I do not know what it might be theoretically. The difficulty has been that in carrying out the law they appeared to be unjust to private people. Give them the power to be equitable, to assist in doing it by rates if they like to assist in that way, and I believe that you would not find the objection so great as it is, even if you found an objection at all in any town. Take Manchester: I believe myself that even Manchester would think very differently on the subject, if the privies of Manchester were to be converted, not at the cost of the cottage owners, but at the cost of a general rate. Then I think they would not understand the logic of being told by Mr. Heron or anybody else that privies were better than water-closets; they would say, "No, if you are to do it at the "public cost, do it; you will improve our property." The question of the incidence of cost in the cause of the unpopularity of it. If you divide the expense among the whole ratepayers, instead of putting the cost of what is really for the public good upon the cottage owners, you would make action for such sanitary alterations and improvements more easy and more popular.

7805. (*Mr. Powell.*) Have you in Liverpool any voluntary association for the promulgation of knowledge and the exciting of interest respecting sanitary matters in any way analagous to the Manchester and Salford Sanitary Association?—No, we have not. That was started in the absence of the medical officer. What they do I am supposed to do.

7806. Then you are of opinion that a public officer such as yourself, warmly interested in the cause of sanitary reform, may discharge a useful function when performing duties in the nature of those voluntarily assumed by this Manchester association?—Yes. I am bound by the tenure of my office to publish statistics, which I publish weekly to a somewhat larger extent than they do.

7807. And you are of opinion that the legislature, when framing a code affecting sanitary matters, ought to have regard to the means of exciting through the officers an interest in and sympathy with sanitary reform?—No doubt it should be obligatory, which it is in Liverpool, in fact it is assumed as obligatory by all medical officers to publish in more or less detail everything connected with epidemic sickness or existing sickness; for instance, during the time of cholera, I not only formed maps of the extent and progress of the disease, but I visited every house in which a death had occurred, either immediately or shortly after the death, and published the name of the patient and the position and bearing of the house, so that it might give those who wanted to trace the causes of disease all the facts.

7808. You are probably of opinion that knowledge so disseminated reaches the humblest classes of society. For instance I find it stated in the report of the association to which I have alluded, that "The lectures "delivered continue to attract large and attentive "audiences, it being not at all uncommon for the "working men to travel three or four miles to hear "them"?—We have nothing of that.

7809. Do you consider that it would be a benefit to have knowledge disseminated by such means and such reports as you circulate?—Yes.

7810. Has anything been done in Liverpool or the neighbourhood under the 37th section of the Sanitary Act of 1866, which confers on the sewer authorities the power to provide hospitals?—No. The Liverpool

corporation have assisted by a gift of 5,000*l.* a voluntary movement for the erection of a fever hospital, but they have not taken themselves any initiative to erect it, and upon much thought on the matter I have never asked them to do so, and what is more, I do not see my way to work such a hospital.

7811. Will you assist the Commission by giving your reasons and explaining the difficulty?—The difficulty is this. There being a hospital for the reception of contagious or infectious diseases, if it be supported by voluntary subscription the managers can make their own laws and rules of admission, so that they can exactly determine the strata of population which may be excluded, and the strata which may be admitted. Thus, if you have an infirmary, supported by voluntary aid, every person to become an inmate must bring a recommendation; that in itself is a guarantee of a certain respectability; but when a local authority such as a town council erects a fever hospital, you immediately come in contact with this difficulty, where shall you stop the people from coming in? The pauper, according to the flesh and blood argument, has a right to enter. The provision at present is that the pauper can go to the workhouse hospital, and he does go to the workhouse hospital. The unfortunate thing is that you cannot point to one man and say, "You go the workhouse hospital," and to another and say, "You go to this other hospital," without by such a system creating jealousy, which would assume all kinds of forms, both religious and political. I do not really see how the town council of a borough can have a public hospital for the reception of a certain class of cases gratuitously without admitting the paupers if they wish to come there. The theory of the workhouse arrangement is good; it says, "We have no hospital *per se*," that is to say, ours is not a hospital for the reception of sick at all, but it is a hospital for the reception of paupers who being admitted in are found to be sick. But there is not one of the lowest Irish who, if there were a hospital that he could get into gratuitously, would not claim to go in there rather than into the workhouse hospital.

7812. And do you think that that objection applies to temporary provision under the same section for the sick during the crisis of an epidemic?—No. When the crisis of an epidemic comes the Diseases Prevention Act comes in, and then it is no longer the council of a borough who provide the hospital, but the guardians or vestry who carry the law into effect, and they can regulate the admission of paupers and of the sick who are not paupers.

7813. But up to the point where you set in action the Diseases Prevention Act your objections would be in force?—It all depends upon the authority who does it. The only difficulty is the practical difficulty which I see myself as to how you shall exclude and admit.

7814. But in such a place as Liverpool, where you have so many arrivals, do you think that there is still a difficulty in providing a temporary place, should mortality or serious disease arise among a great company of incomers?—That is no doubt one of the difficulties, but it is one which I have felt so far, I am glad to say, only theoretically. The Act of 1866 appears to give great power. It enables the local authority to erect a hospital, it also enables the local authority to make an agreement with the owners of a hospital. Now, what we practically do is this: if a case of sickness arrives in the Mersey, Mr. Gardner, the collector, notifies the fact to me; if it be fever, I send down the fever van; if it be small-pox, I send down a small-pox van. It costs the man nothing; I receive him on landing, and I take him if he likes to the workhouse hospital; but if the owner of the vessel or he himself chooses to pay for it, he goes to a hospital where they pay a guinea a week, the Everton Hospital.

7815. It is not a part of the workhouse premises?—Not a part of the workhouse premises. The difficulty has been this, that the workhouse people might turn rusty. They do quite the contrary; they are an example to everyone in that way, for they have some very first-rate men among them, and instead of throwing any difficulty in the way, they assist me; but if they liked they might say that theirs is not a hospital at all for the reception of sick, and therefore it is not really included in the Act of 1866; but it is a hospital simply for the reception of paupers who are in the house. They must first come into the house, and then they are admitted into the hospital. What it might be if we had a parochial board that opposed us I do not know.

7816. In effect then, except for being assisted by the voluntary action of individuals there, you would feel yourself in considerable difficulty?—Yes. I think that when the fever hospital, towards which the council has helped, is erected, we shall be able to make arrangements with the managers in the terms of the Act of 1866. But for the local board to erect a hospital is another matter. I remember that at the time when the Act of 1866 passed, I asked Mr. Simon for whom that clause was meant, for certainly we dare not build a hospital and exclude people from it.

7817. Then in fact you would rather face any difficulties which might arise from a sudden arrival of sick and diseased people than be permanently embarrassed by providing accommodation under the provisions of that section?—Yes.

7818. In Liverpool you have a considerable emigration trade?—Yes.

7819. I believe also that some correspondence has taken place between the authorities in Liverpool and the Emigration Commissioners with reference to some better provisions for poor emigrants who may fall sick and the like?—Yes. The number of emigrants who have arrived this year and passed through Liverpool, is 99,200. Foreign emigrants travel under contract. They make arrangements with agents abroad who bring them to England, and then they have a further contract note to carry them across the Atlantic. When the emigrant is travelling through the continent, his government insists upon the contract providing for him through the whole of his journey both for his keep and travelling; but when he arrives at Hull, this contract is taken from him, and he is brought on to Liverpool simply as an emigrant. When he presents himself to the ship he comes under the navigation law touching emigrants, that is, when he has, as the phrase is, been mustered as an emigrant, the owners of the vessel then become legally answerable for his keep during any delay or detention of the vessel. We found, however, that a number of these men, their children or themselves, were sick, and could not be received on board the vessels. There was no place in which they could live. I would not allow them to go into lodging houses; the Board of Trade would not allow them to go on board the ships, and there was nothing for it but their being received into the workhouse; and during the time of the emigration in the few months that it existed as many as 500 were received into the workhouse, a number of them no doubt ill, and a number of them that were not ill. The pressure upon the public rates was not of any practical consequence on that occasion, because the four or five companies whose vessels carry emigrants agreed *proprio motu* to pay the money as if the emigrants, having been mustered, were detained by the non-sailing of the vessel instead of by their own sickness. The difficulty, however, was on the part of the local authority; they said, "When the "workhouse is empty, and we can receive these "people, the 1*s.* 3*d.* saves us from any loss; but sup- "pose that we were full, or suppose that there was "epidemic sickness, what are we to do? And in pros- "pect or all probability of such a thing occurring it is "quite necessary that we should take certain premises "or go to certain expenses to be prepared for a pres- "sure;" and they called upon the owners of the vessels to guarantee them against this difficulty, and an interview took place in the mayor's parlour, and the large companies agreed to this: they said,

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"We will continue to pay for each of our men who "shall be kept by the workhouse authorities 1*s.* 3*d.* a "day. We agree further to guarantee in equal pro- "portions all the expenses that may subsequently be "incurred, or which you may think it necessary to "incur, in providing a separate hospital, and a separate "establishment for them." That I believe is the arrangement now existing.

7820. And do you consider that that arrangement is on so large a scale that it affords sufficient security against any practical difficulty and hardship upon the emigrants?—Quite so, as long as this engagement (which continues only for one year) holds. It is an arrangement out of the bounty of these large traders, but I have no doubt that it will be continued.

7821. Has any further communication taken place between the authorities in Liverpool and the Emigration Commissioners since a letter from the latter, dated the 1st of June 1869?—I think not. I have not heard that there has.

7822. I believe a communication was made from Liverpool by letter dated the 31st of May, and a reply was received bearing date the 1st of June?—Yes.

7823. Will you hand that correspondence in?—Yes. (*See Appendix, p.* xxx.) The question of emigrants as producing sickness, and the whole question as to the laws of landing arrangements certainly requires revision as far as we are concerned, as can be judged by what occurred during the time of the Helvetia. In 1866 the Helvetia left the port of Liverpool, and got to Cork. The authorities at Cork would not let any of her passengers land there or come in, and they sent her back to Liverpool, and that was the origin of that fearful epidemic in 1866. If they had landed, as I said at the time, just in the neighbourhood of the Cove of Cork, and had been perfectly surrounded by a *cordon sanitaire*, the disease might have been stamped out then and there; instead of that, they sent the vessel back to the over-peopled place of Liverpool.

7824. You have recommended, and the same recommendation has come from a previous witness, that in the event of a poor owner being compelled to effect certain sanitary improvements the expense should be defrayed by the local authority, how far would you carry that? I think that you only carried it as far as privies and waterclosets?—Yes, as far as privies and waterclosets is what practically struck me.

7825. Do not you think that the extensive operation of such a provision would induce people to allow property of that nature to fall into disrepair in the hope that the authorities might make the repairs at the expense of the town?—I think not if you drew a distinction between a nuisance by reason of position, and a nuisance by reason of condition.

7826. Do you think that there is any danger of such a system producing corruption, seeing that the owners of these small cottages are electors of the town council?—The evil would soon cure itself; because if it is an evil of position it could only have reference to buildings already existing. The local authority have the power by their byelaws respecting space round buildings, and by other laws to prevent the evil in future; and certainly they should have no power to reward persons for their own laches. But what I am referring to is (and I have always in my eye Liverpool) that before 1842 every man did what seemed best to him; they built just as they liked, and they thought that they had a right to do so, then they sold that property, and the people that I am punishing have nothing to do with the evil, they have bought it and have held it for years probably in their family, and did not know that it was a nuisance.

7827. Is there a sufficient supply of water in Liverpool among the masses of the community for waterclosets?—Yes. It so happened that in 1867 the question of waterclosets came under the notice of the council in reference to an inquiry which began by the Home Secretary, and the town clerk was authorized by the water engineer, the late Mr. Duncan (who, I may mention, was one of the most practical men as a water engineer in the country, and certainly he was as careful of water as the Chancellor of the Exchequer would be of money, he would not allow it for anything he could help), to write this: "Upon "a very liberal estimate the 14,000 privies mentioned "by the inspector as remaining to be converted "would not require as waterclosets more than three quarters of a million of gallons per day, and even "assuming, as the council believe to be the fact, that "the number of privies is nearly double that stated "by the inspector, the providing water for them is a "mere bagatelle, and a matter of very trifling consi- "deration in connexion with the question of the "water supply."

7828. I will ask you another question that has been a good deal touched upon. I do not myself understand how the adoption in towns of earthclosets would diminish the necessity for drains, seeing that there is other liquid refuse which must be discharged from each house, besides that which would issue from waterclosets?—In the first place I may mention that I cannot in the wildest dream picture to myself a large town of 500,000 inhabitants with a system of earthclosets. I may mention that the Lancashire midden is so far an earthcloset that it is a fixed privy, which is deodorized to a certain extent with ashes. These must be drained. They tried at first not to drain them, but that occasioned a great nuisance, and then they drained them; but privies cause as much nuisance, I believe more nuisance, from bad gases than the waterclosets do. Thus, taking the estimated amount of fluids and solids that comes from a man at 40 oz., and assuming that only 2 oz. of that is solid, if the privy lets this water off, in some way it will go into the sewer; it all of it drains into the sewer. The only difference is that it flows slower through the sewer than if it was washed with a watercloset, and in the slow movement, being longer in the drain, it is more liable to putrefaction, and positively evolves more gases, as I know from the experience of the drains in courts before and after the conversion of the privies into waterclosets.

7829. Then the adoption of earthclosets would not supersede the necessity of drains?—I cannot understand how it should.

7830. You stated that you sent two of your inspectors to enter certain houses that you mentioned. I presume that that entrance was only into those houses which were registered under the 35th section of the Sanitary Act?—Only into those. We have always to notify the intention to register a house both to the owner and to the tenant.

7831. My question referred to entry?—We only enter where we register.

7832. And the regulations laid down under that section are such that you enter as of right without notice, or with any warrant from the magistrate?—Yes, enter day and night.

7833. With reference to Mr. Torrens's Act of last year, a house may be unwholesome; that unwholesomeness may arise, the house being good, from overcrowding, or it may arise from some defect in construction?—Yes.

7834. As I read Mr. Torrens's Act and your Liverpool Act those Acts can only be set in force in case that unwholesome condition arises from ill construction?—Yes.

7835. If it arises from overcrowding or from unhealthiness on the part of the people, then you proceed against it under the section dealing with overcrowding?—Yes.

7836. Has anything been done in Liverpool since Mr. Rayner gave his evidence, in the way of erecting a mortuary?—I would like to explain that what he referred to was not a mortuary. The movement on the part of Mr. Hutchison was in consequence of a letter from myself. My object was not the erection of a mortuary but of a mortuary chapel. The evil of overcrowding, the evil of wakes, and the evil of keeping the dead with the living, is found to exist almost entirely among the poor Roman Catholics of Liver-

pool. I received the assurance of the Roman Catholic bishop of Liverpool that if there was a mortuary chapel erected he would carry it out in the best way he could. In consequence of my writing on this subject to several friends to get up a subscription I received from Mr. Hutchison an offer to do it at his own cost.

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7837. Since Mr. Hutchison's bankruptcy nothing has been done I believe?—Nothing has been done, but we shall have it soon. This private concern of the mortuary chapel the council have nothing to do with.

7838. The plan so commenced by Mr. Hutchison will be completed?—Yes.

The witness withdrew.

(63.) The Right Honourable Lord Penrhyn examined.

The Right Hon. Lord Penrhyn.

7839. (*Chairman.*) We are commissioned to inquire how we may consolidate and simplify both the law and the authorities for local government throughout the towns and country of England and Wales; we have had a great deal of evidence from towns, and are now more specially anxious to get the opinion of those best acquainted with the country administration, and we have asked your lordship to be so kind as to give us your opinion as to the amendments that might be introduced into local government in rural districts, especially in Wales, where your lordship has such large property?—My experience is derived from my own immediate neighbourhood. I am a chairman of two local boards in that district, and also attend the board of guardians, and I know the operation of the various sanitary laws which are in force at present. My opinion is that there is at this moment plenty of power in the different Acts. They require simplification and consolidation, because it is very difficult for boards of guardians, or even for local boards in the country, to understand the various Acts over which those powers are now spread. It would be an immense advantage if they were consolidated and simplified. But with some very few exceptions, I think sufficient powers already exist in the more rural districts and the small towns, provided that they are fully carried out.

7840. The powers in country districts are by the existing law divided, some of them being given to the vestries of separate parishes, and some to the boards of guardians; do you think that it would be better in consolidating the law to give all these powers to one authority?—I do not think that it would be advisable to abolish the local boards or the corporate authorities which now exist, but I think that in all the rural parishes not under local boards the whole of the power should be vested in the board of guardians. I think it should be made compulsory upon the board of guardians to appoint inspectors of nuisances, and that those appointments of the inspectors of nuisances should be made subject to the approval of the central board in London, whatever board it may be, either the Poor Law Board or the Home Office, in the same way that some of the officers of the union are now subject to their approval before their appointments can be fully ratified. And also I think that there should be authority in the central board to determine the number of inspectors of nuisances to be appointed by those boards of guardians, because many of the unions are of such an area that it is quite impossible that one man could perform the duties over the whole surface of it.

7841. At this moment boards of guardians have the power to appoint inspectors of nuisances, and I understand your lordship to propose that they should be compelled by a central authority to do so in all cases?—In all cases.

7842. Have you an opinion as to what would be the best class of men to be so employed?—I think that should be left very much to the discretion of the board of guardians, subject to the approval of whatever central board may be the court of appeal.

7843. Have you a county police in Wales, the officers of which you think might discharge these duties?—I should not at all approve of the police being in any way mixed up with these proceedings. I do not think that they would be the authority to carry them out. The police are paid by the ratepayers, they are brought into collision with the ratepayers; and I think it should be a separate authority from the police. I think that it would be interfering with their other duties and that it would not work harmoniously if they were the parties to carry it out.

7844. Is it usual now in Wales for the boards of guardians to appoint relieving officers to be inspectors of nuisances?—Speaking of the boards of guardians throughout Wales, or even throughout my own county, I can hardly speak positively as to that. In my own district, which is a large union, we have two local boards existing under particular powers. We have a large union extending into two counties, its length being 30 miles, and we have three different inspectors of nuisances appointed for that union, and those officers were appointed by the board of guardians. I do not think that they are the relieving officers, I think that they are different individuals, and I think that it is very desirable that they should not be the relieving officers.

7845. Can you, from memory, tell us what salaries are paid them?—I cannot at this moment inform you precisely of that. They perform their duties very efficiently as far as I can see. In short in that district I think the thing is remarkably well worked out. I do not see that there is anything needed there which would require additional power; but I have heard of other districts where it would certainly appear that some primary moving power is requisite, and I think it would be a very desirable addition that there should be power to set the boards of guardians in some cases in motion, or even the local authorities; because, as the last witness has said, in some of the corporate towns there may be a little indisposition on the part of the local authority occasionally to set the works of necessity going. I knew one instance some few years ago which illustrates that. The town of Carnarvon had been without water supply, and had been extremely badly drained; an outbreak of cholera took place, and I was informed by one of the corporate authorities that there had been a great difficulty in enforcing sanitary regulations there, and I wrote to the Privy Council requesting that an officer might be sent down from the Privy Council to inspect the place. That was done, and the result has been that since then there has been a water supply afforded to the town, and the drainage has been carried out thoroughly, and I am informed that the healthiness of the town has improved amazingly since then. In our own immediate district we have established a water supply and a thorough system of drainage for all the populous parts, the two districts which are under the local boards, and the healthiness has very much improved.

7845*a*. Does the board of this very large union, which extends into two counties and for 30 miles along, meet at a central point?—It meets at a certain point.

7846. Is not the enormous size of the union rather detrimental to their regular attendance?—It is undoubtedly. It is a very peculiar union. It is a union which has been brought together by a deficiency in the original Poor Law Act of 1835, which gave the central board the power of adding parishes to unions already formed, but did not contain a power of enforcing the building of a workhouse. Consequently they had tacked on parishes in another county to that union which was first formed, and where there was a workhouse, so as to extend it to a very large area, and one very inconveniently shaped for any other purposes in the way of forming a board.

7847. Is it your opinion generally that the unions want revision?—I think they do. But there is a

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power given by a recent Act, if I am not mistaken, to the Poor Law Board to consider the revision of any union upon the application of, I think a tenth part in value of the ratepayers; at all events, upon parishes representing a certain proportion of the rateable value making a complaint to the Poor Law Board, I think there is a power of revising the union.

7848. Have you adopted the Highway Act?—Not in our part of Wales.

7849. Do the union areas at all coincide with the petty sessions areas?—No. As I have just informed you, our union extends into a considerable part of two counties.

7850. What are those two local boards which you have mentioned as being within the area of your large union?—One is the local board of the town of Bangor and the other is the local board of a place called Bethesda, which is a conglomeration of houses, and has sprung up to be a town from being a mere hamlet, and I may say the same of Bangor. It has increased by the bringing together of three almost separate villages within my own memory, and we have found those always the most difficult cases to deal with, because it has been a conglomeration of houses built without any regularity or any preconceived plan of drainage, and those places are always attended with more difficulty than where a town is more regularly built.

7851. How was that board of Bethesda formed?—It was formed under a local Act which was obtained. It was done before the Local Government Act was passed.

7852. Has it adopted the general Act?—It has since, for the purpose of extending the rating in regard to certain rates. It enabled them to extend certain drainage rates over the whole area. Special and district rates were before levied, and the Local Government Act was adopted, which I think enabled them to spread the rating over the whole area.

7853. Is the board elected?—Yes.

7854. And does it go out every year?—A certain number of the members retire each year in both boards, I think.

7855. Are there ex officio members?—No, not on those boards.

7856. How is the interest of the owners represented on those boards, supposing that they are not themselves elected?—There are owners on the board, and there tenants on the board.

7857. What is the qualification of the electors?—I cannot tell at this moment, but I believe it is the fact of being ratepayers.

7858. And is the board a large one?—No; each board has nine members.

7859. Supposing that the whole of that union were placed under this board of guardians for all local government purposes, what would be the relation between the board of guardians and these local boards which exist in the cases of Bangor and Bethesda?—It would exclude the area of the local boards. I think it would be very improper to merge all the local boards in the board of guardians. I think it would not work well, because the circumstances are so entirely different in these populous parts from those of the rural parts. I think that you would require a different class of persons on the board, and persons thoroughly acquainted with the immediate locality.

7860. Do the three inspectors who are now appointed by the board of guardians inspect Bangor and Bethesda?—No, not within the area of the local boards. They have their own inspector of nuisances besides, and their own surveyors also.

7861. Supposing this board of guardians to have all the functions of local government, not only those which it now has for the removal of nuisances, but also the superintending of drainage, water supply, and other subjects of local government, how far do you think that such a board would gain the willing acquiescence of the owners of property in carrying out their orders, speaking of the rural districts only?—The water supply of really rural districts is a thing that would not come generally into operation. No great work would probably come into operation there, because the population is so spread there that it would be very difficult to carry out a water supply requiring great works upon any regular system, at least it would in our country.

7862. I suppose in your country the water supply is abundant?—No, for the towns we are obliged to bring water from a considerable distance. There was a water company established for the supply of Bangor, which was very badly off some years ago, and the water is brought six or seven miles, and there are negotiations going on at this moment for the purchase of those works in order to take them into the hands of the local board, but in rural districts only they are not required.

7863. Would you make the same remark as regards drainage works, that they are not required in rural districts?—As the rural districts become populous works for drainage become more and more a matter of necessity, and in that case I think that for the purpose of carrying out combined works of drainage, I mean works of drainage which would include and pass into the areas of different local boards or boards of guardians; it would be necessary to have some other board, which I think might be framed by a certain number of the members of each local board combining together for the purpose of forming a general board to carry out those works; but then it should be done, in my opinion, under the Home Office, an inspector being sent down to see that the works are necessary, and in order to superintend to a certain degreee the execution of those works.

7864. But in that large union that you have referred to the area would be large enough already, and you would not require to add another union for that purpose?—No, in that union you would not, but as to works of drainage for that union no one work would do for the whole, because it is in two counties, and they are separated by an arm of the sea. But I could imagine cases where it would be necessary in order to carry out drainage as the places became populous, to carry on works which would extend beyond the area of the union in which the immediate necessity might arise.

7865. Would that apply to works extending outside a union, or only outside a parish? Would not a union generally be large enough to carry on structural works?—It might not be because the area of the union might not be at all conterminous with the watershed or the supply of water.

7866. But in that case would there be anything more necessary than the combination of the local boards interested?—Nothing more, I think; but in that case I think it should be subject to the control of the central authority for the execution of the works. There is a power existing so to combine and of executing works for the purpose of outfall beyond the area of the immediate district, but I am not sure that there is any power of going to the fountain head with regard to the supply of water or preventing the pollution of rivers.

7867. Do you think that any local authority such as the board of guardians might have power to regulate the dwellings of the labouring class, as to their size and healthy accommodation?—They would have already under the powers of the Act to a certain degree a remedy and a control with regard to overcrowding in dwellings, but it would be a very difficult thing I think to place in the hands of the board of guardians a complete control over the erection of buildings or cottages over the whole area of their district. I think it would interfere very much with property, and I do not think that it would work well.

7868. We have had it suggested that the local authority might have power to lay down regulations that there should be so many cubic feet of air in the dwelling rooms of cottages, and that a cottage for a labourer's family should have three bedrooms. Do you think that such regulations might be entrusted to a local authority?—I could give you cases

where it would be wrong I think to enforce such a stringent regulation as that. On my own property I have as many cottages perhaps as almost anybody, and have built a great number within the last 30 years. The whole class of cottages in the country has entirely altered during the last 30 years. I have never allowed a cottage to be built without three bedrooms, except in particular cases where it was for the family of a old widow or something of that sort of thing, but I think it would be impossible to lay it down by a stringent regulation that you must in every case have three bedrooms, because if they were not wanted the people would be taking in a lodger, and you would get the house as much crowded as ever; but there is so much going on in the way of improvement of cottages that I think that might be left to the operation of public opinion.

7869. Would there not also be a difficulty if the local authorities were to lay down such regulations from the fact that cottages for labourers are usually built at some loss by the landowners, and that it would be difficult to give an authority power to order works which were to be unremunerative?—Well, it certainly would if they had the power of insisting upon cottages being built, because we all know that a cottage is not a remunerative sort of property; and that is one of the reasons why I think it would be hardly right to give the board of guardians the power of insisting upon cottages or upon any specific plan of cottage.

7870. How are the cottages built in the great slate quarries, by the employers or by the owners of the land?—Two of the great slate quarries in my own county are in the hands of the owners and worked by the owners. In my own case I have built a great number of cottages. The workmen themselves have also built a very great number upon lease; but then I always insist upon their building according to a certain plan and specification, and they have taken a pattern from those cottages which I myself have built, and they are all remarkably good cottages now. In the case of the other large quarry, which is also worked by its owner, I believe that the owner has also built a considerable number of cottages, and there have been a great number built by the people themselves on leases. With regard to the other quarries I really do not know what has been done. There are quarries scattered round, many of them worked by people who have no other property in the county; and there I think they are built on lease by the people themselves, or by speculators.

7871. Are there many cases where men take building leases for the purpose of speculating in building labourers' cottages?—I should apprehend that there are some cases, but not many. They are generally built by the workpeople themselves.

7872. Supposing the board of this large union to become the local authority for the whole of its area except the local boards which exist within it, do you think that it would for convenience act by a committee for the purpose, or would the general board be the authority?—I should say a committee.

7873. And do you think that that committee should be specially elected for this purpose?—Yes, I should say so. You know that already on each board of guardians you have an assessment committee, and the probability is that the same members would be chosen for both purposes.

7874. Do you think that there is any necessity for an intermediate authority between such local authorities as these and the Home Office?—I think that some additional officer or power is required in the way that I have already said of putting the boards in motion in the event of the existence of any nuisance. I think that there should be some power of forcing the boards of guardians to take the matter up, and I think that the poor law inspector would be the proper person to do that. A poor law inspector goes his rounds to the different districts under his charge. He attends the meetings of the boards of guardians, and he becomes acquainted with the circumstances of the union, and I think that he is a very likely person to hear of anything requiring immediate attention; and I think that a power might be given to him of putting the board in motion, or acquainting the central authority with the necessity of some action being taken on it.

7875. That would make him in fact a sort of president of local inspectors?—Yes, at least if there is any complaint to be made by any individual, he should apply to the poor law inspector of the district, and the poor law inspector would then communicate with the central authority and issue directions for the matter to be taken up.

7876. What class of men are appointed generally in Wales as medical officers under the poor law?—As far as I know the men are remarkably well selected. There have been some cases in which they have neglected their duty; and in those cases I think there has been an appeal to the Poor Law Board, and they have been always dismissed. But generally speaking I think that it has been remarkably well administered. They are very attentive to their duties and there salaries have been adequate.

7877. Are they a class of men who might give reports or information upon any defects of medical provision?—They would naturally be the people to whom you would apply for a medical certificate with regard to any house unfit for human habitation, or any nuisance existing dangerous to health.

7878. Would you have them in that case communicate directly to the Home Office?—No, I think the communication should be made to the board.

7879. Do you think that there is any kind of superior medical officer required over those officers, much in the same way as you have suggested that the poor law inspector might be a sort of chief of inspectors of nuisances?—I do not think that that is required.

7880. You think that no higher class of medical officer for the purpose of reporting generally on the state of health throughout the kingdom is required beyond the medical officers existing now?—No, I think that the poor law inspector in his periodical visits to the boards of guardians would ascertain whether there was anything epidemic existing, or anything going on requiring attention.

7881. Are you not afraid that if local authorities were constituted with larger powers of local government, the local rating for such purposes would become excessive?—No doubt any very heavy large works of drainage or water supply would fall very heavy upon the rates.

7882. Do you consider the local rating at this moment heavy for sanitary purposes?—Those rates that I am acquainted are not very heavy at this moment; we have reduced them. We have paid off the expenses incurred at the commencement of the necessary works, and we are reducing the rates now; and I think that they run in the two cases I speak of, in the one case 10*d.* in the pound for the year, and in the other 1*s.*, and that has occasionally been 10*d.* in the pound.

7883. Do you think that by transferring the power of the vestries to the board of guardians, and so consolidating the authorities, the present local rating might be economized?—No, I do not think that it would tend much to that. May I ask do you mean by that the merging of all local boards in the board of guardians, taking the whole area of the union?

7884. My idea was, that the board of your union should have transferred to it all local functions which now rest with the vestries, except in the two cases of Bangor and Bethesda, which have local boards, and I ask whether such a transference of the functions from all the vestries of the different parishes in that union, with the exception of those two, to the board of guardians would be likely to economize the whole expenditure?—I do not think that it would make much difference in that way, because I think that generally speaking these things in that district have been carried out by the boards of guardians, and not by the vestries.

7885. Are there in that union many smaller towns

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than these two which have local boards?—Yes, when I say towns, they are places which have become populous from having been villages.

7886. And do you think that these smaller towns would work together with quite rural districts in local government?—Yes; I think they would. We have enforced sanitary regulations in one or two instances where the villages have become more populous, and that has been done under the direction of the board of guardians, and the thing has worked very well.

7887. Do you wish for any more power of appeal to the Secretary of State than now exists against any tyrannical action on the part of a local authority?—I have not seen any necessity for it, but if there is any appeal necessary, I think that you would find some organization of that sort given in that very Act to which you referred a little time ago, the Artizans and Labourers Dwellings Act. I think that there is a power of appeal given in that Act by the owners to some higher authority or to the Home Secretary upon works being ordered by the rural authority. It might be prudent to insert that in the other Acts.

7888. Your opinion being as I understand against the necessity of any intermediate body at all, do you think that the power of the Secretary of State requires to be in any way altered?—No, I do not think so. I think that there are full powers at present.

7889. (*Mr. Powell.*) The appeal under Mr. Torrens's Act is to the quarter sessions?—It is, and the ninth section says, "Thirdly, that in any case of appeal "the court shall, at the request of either party, state "the facts specially for the determination, in England or Ireland, of Her Majesty's Court of Queen's "Bench, or in Scotland of either division of the "Court of Session, in which case it shall be lawful "to remove the proceedings by writ of certiorari or "by petition into the said Court of Queen's Bench "or to the Court of Session respectively."

7890. (*Chairman.*) In the ninth section of the Artizans and Labourers Dwellings Act of 1868 to which you have referred the appeal against an order of the local authority is in the first instance to the court of quarter sessions. I presume from your former answer, in which you did not seem to recommend any intermediate authority, that you do not recommend any such appeal as that against the order of the local authority, but an appeal to the Secretary of State?—At the moment that I gave that answer I thought that it was to the Secretary of State, but I find that it is to the quarter sessions. I think it better that the appeal should be to the same body in all cases.

7891. The intermediate authority which has been recommended to us by certain witnesses has been the proposed county financial board, which is a part of the quarter sessions. Do you think that no such intermediate authority is advisable between the local authority and the Secretary of State?—You mean, I presume, in the case of an owner finding himself aggrieved by any action of the local authority?

7892. Or in any other way; not only as a court of appeal, but also as a more immediate power to set local authorities in motion?—In reference to appeals from owners in regard to works ordered by the local authority, I mentioned the Home Secretary under the impression that the Home Secretary was the court of appeal in the case of the Artizans and Labourers Dwellings Act. I find that I made a mistake on that point, and that it is to the quarter sessions; and I think it is desirable that in all cases the appeal should be to the same court. Still that does not affect the primary power of putting the local authority into operation. I think still that there should be some person whose duty it should be upon hearing of a nuisance existing to put the local authority in motion, and that the poor law inspector would be the fittest person.

7893. If the Secretary of State is wanting in power and agency, you would prefer giving him more power and agents to transferring his power to an intermediate authority?—Yes, with that exception.

7894. (*Mr. Shaw.*) With regard to that question that you were speaking of just now, as to whether guardians could safely be trusted with any regulations as to the building of cottages, supposing the Commission to be of opinion that any regulations of that nature were necessary, do you not think that they would be much more safely trusted to a person like the county surveyor and agent of the county board? You could hardly trust them in every case to the Secretary of State, could you, though you might trust them to the county surveyor?—What county board do you mean, may I ask?

7895. Whatever kind of board was constituted as the intermediate authority?—I think that that would be as you say, because such persons would be more likely to understand the requirements of the parish.

7896. What I understand your lordship to say is that the guardians would be a satisfactory authority, supposing that they have no greater powers to exercise than they now have; but if the Commission should be of opinion that it is desirable to give larger sanitary powers of interference, then does it not seem almost necessary that some more responsible body should be constituted to exercise those powers?—You are now speaking of the building of cottages?

7897. And any increased sanitary power?—I do not think that for those purposes a higher authority is necessary.

7898. Is it the case that men of education and intelligence serve on boards of guardians?—I think that you will find farmers in many cases and people of that class, who are possessed of a great deal of intelligence, and who are quite qualified to sit on those boards; in that country we have many excellent men who sit on these boards, and pay great attention to them, and they are always very much alive to the necessity of sanitary regulations as far as I can see. I do not mean to say that the members of boards of guardians are always individually intelligent, but taking them collectively there are amongst them a number who do very much look after the business, who are men of great intelligence and quite alive to the need of all these sanitary regulations.

7899. So that it is not necessary to introduce a more intelligent element from without?—As far as I can see I do not think it is. I think that public opinion has its weight with them, and to a great degree keeps them up to the mark, and also we have a number of men of considerable intelligence who practically carry on the work of the board.

7900. (*Mr. Powell.*) Do you think that it would be a wise act on the part of the legislature to give facilities for the erection of village hospitals by providing funds towards them?—If you mean out of the rates I do not think that you would find that it would be acted upon very much There is a great indisposition amongst the lower orders to go into a hospital, and then when you have small village hospitals they may do very well for some cases, but they do not do in cases of fever, because you would very likely spread that fever by putting somebody into the hospital who had not got it to succeed immediately a person who had had it. I think it better to send them to general hospitals or to treat them separately in their cottages in those cases. You are aware, of course, that lately the Poor Law Board has taken increased action with regard to the workhouse hospitals, and that in almost every county there is a hospital, now providing or already provided, connected with the workhouse, but there is a great indisposition amongst the lower orders to go to a hospital of that sort.

7901. (*Chairman.*) Do you think that there would be this advantage in making the Secretary of State the head of all these operations, that he would be more likely to introduce large works and improvements than the less intelligent body on the spot?—I can hardly give an opinion about that.

7902. It has been suggested that by giving the Secretary of State more power and agency the new scientific improvements of the day would be more

likely to be introduced into localities than they could be by the local authorities ?—What scientific improvements do you mean, may I ask ?

7903. Drainage, water supply, and works of that sort, both on the best principles, and also on uniform principles throughout the country. Are not those two great objects which might be more effectually carried out from the head office in London than they could be carried out by the local authorities in the county ?—I think that where you have any amount of intelligence amongst the boards of guardians, or even these local boards, they generally will hear of all the improvements that are going on or that have been effected, and the surveyors to these different boards make themselves acquainted with all the modern inventions. I do not find that they are at all behindhand in that respect. There is so much circulation now of the improvements in building and in engineering by means of the papers that they become acquainted with all these things. I do not think that there is any deficiency in that respect.

7904. The general tendency of local authorities would be rather to save themselves expense, not to employ first-rate men, would it not, than to embark in any great scheme of improvement ?—Of course they would not wish to do anything more expensive than is necessary ; but I think that there is generally a feeling that it is the most expensive thing to do the work badly or to employ inefficient men.

7905. But would not that in your locality be rather the opinion likely to occur to you than that likely to occur to the general ordinary class of guardians ?—It may be so. I can hardly form an opinion on that without knowing the particular boards of guardians.

7906. When you suggest the employment of the poor law inspectors in these matters, would you suggest any further connexion of the local governments in the country with the Poor Law Board in London, because it has been suggested to us by some that that would be a better head of the whole administration of local government than the Home Office ?—I am rather inclined to think that the Poor Law Board should have the power of placing the things in operation. They should say, "There is a nuisance existing in "this union, and we call upon you to execute works." Any appeal should lie still with the Home Office. I think it would be better to give the appeal to a distinct department from that which puts the matter in motion.

7907. And you think that the best office for the head of the whole local government of the country is the Home Office ?—Yes, I think so, in that respect.

The witness withdrew.

(64.) Clare Sewell Read, Esq., M.P., examined.

7908. (*Chairman.*) You are member of Parliament for South Norfolk ?—I am.

7909. Will you be good enough to give us your opinion as to any improvements that might be adopted in local government in the country districts about the county which you represent ?—I believe that for sanitary purposes the existing Acts and regulations are quite sufficient.

7910. Supposing the Acts and powers sufficient, is it your opinion that the authorities in which they are vested are the best ?—I think that for some purely local purposes you must still have the action of the vestries, but for general sanitary purposes the board of guardians is the best local authority.

7911. At this moment the distinction of the law is that drainage, water supply, privy accommodation, and other similar matters are placed under the vestries of each parish, while the removal of nuisances, including remedies against infection, over-crowding, &c., are placed under the boards of guardians, would you suggest any alteration of that division ?—No, I do not think I should, I believe that practically it works fairly well.

7912. Is it not a disadvantage to have two authorities where one would do ?—Yes ; but at the same time, if you have a town in the midst of a large rural district which composes the union, you must I think have the vestry of that town consulted as to the supply of water or other purely sanitary local matters.

7913. You have just heard Lord Penrhyn's evidence, in which he mentioned that in a large union 30 miles long there are two towns, Bangor and Bethesda, which have local boards of their own, and yet he seemed to think that the board of guardians of the whole union might be the best local authority for all the rest of the union, leaving these two places their own local boards ; would you not agree in that opinion ?—I think so certainly in the cases of villages, I believe that the villages might, all of them, taking out the towns, be under the board of guardians.

7914. Then in fact you very much take the view that Lord Penrhyn has just expressed ?—Yes. Of course I apprehend that in 999 villages out of 1,000 you would not require a supply of water or any exceptional sanitary regulations.

7915. But you think that there would be an advantage in consolidating the two authorities, the vestry and the board of guardians, as far as possible ?—As far as possible, and for all general matters.

7916. And you would only leave any such powers in the hands of the vestry in towns ?—In the case of towns or very large overgrown villages that you might call towns.

7917. Supposing that the powers of local government were so concentrated in the boards of guardians, would you propose that the boards should act for these purposes by committees formed in the same way as the assessment committee ?—In a purely agricultural district I have always found that the guardians themselves are quite capable of dealing with any sanitary matters. It might be better perhaps to delegate that power to a committee of that body.

7918. A committee specially elected by the board of guardians for sanitary purposes ?—I should think perhaps in certain cases that would be, but we have in Norfolk discovered no necessity for that.

7919. How should you say, talking very generally, that the rural districts in Norfolk are provided with water, and drainage, and privy accommodation, and various provisions for health ?—The supply of water is generally very good, almost all from springs. The privy accommodation has been very considerably augmented of late years since we have had our inspectors of nuisances, who are generally speaking the relieving officers of the union. What we have most to complain of in Norfolk is probably the mills, which dam up the water, and in some cases certainly are prejudicial to health. There is also the case of some navigations, especially the state of the river Waveney.

7920. How far are works of arterial drainage carried out in your county ?—They are generally under the Haven and Pier Commissioners of the town of Great Yarmouth, for instance, which has the management of the rivers that empty themselves at that port.

7921. Are there any cases in your county that you are aware of of rivers and streams being polluted by drainage ?—The river at Norwich has been turned into really a common sewer, and an injunction of the Court of Chancery has restrained the city authorities from draining the sewage into the river ; and they are now executing a very elaborate and most costly system of sewerage, which is to be applied for agricultural purposes.

7922. What is the body which you think should look after such works, both the ridding of rivers from pollution and arterial drainage ?—I think that if there are to be county financial boards, no better authority can exist.

7923. Do you think generally that county financial boards would constitute a good intermediate authority between local authorities, such as the boards of guardians and the Secretary of State ?—Yes, I do ; but

I would put it rather as a sort of concentration of the local authorities into one great district, as a county.

7924. And what would you propose for small local works such as merely apply to a parish for instance?—I think that might be left to the board of guardians in a usual way unless there was some great neglect, and in that case an appeal might be made to the county authorities.

7925. Do you see much difficulty in uniting small towns and country villages together for local government purposes?—Yes, I do, a great deal; there is a vast difference between the requirements of land and the requirements of houses; and the way in which property is now assessed, that is to say, on its annual value, is about the very worst way I apprehend of getting at the amount of benefit that is derived from the improvement by the different properties.

7926. May I understand you generally to give us the opinion that rating upon the rent is a bad means of adjusting the burden, and that the expenses of improvements should be levied according to the benefit received?—I think they should be, because if you take three acres of land which is worth 5*l.*, and a small house which is worth the same sum, what might be of very considerable benefit to the house would be of no benefit whatever to the land, and both I think should not pay at the same rate.

7927. You stated just now that in Norfolk the boards of guardians generally made their relieving officers inspectors of nuisances?—They do, and thus the medical officers are always at hand to point out any peculiar nuisance or defective drainage that may have escaped their observation.

7928. We have had it suggested by several witnesses that the police might be made effective inspectors of nuisances; what is your opinion on that point?—I should say certainly not.

7929. You think that they would not be a good body for the purpose?—Most decidedly not.

7930. Not even the higher officers of the police?—Not any person connected with the police at all. They are quite unpopular enough now without making them more disliked.

7931. Are not the relieving officers in some cases rather too much dependent upon the boards of guardians?—I think that they are so well looked after by the medical officers that they perform their duties very satisfactorily. They cost us little, they are in all the parishes every week going into the cottages, and in the way of seeing any nuisance. I think that we generally give them about 10*l.* a year extra for performing these duties.

7932. Are the dwellings of labourers in your county pretty satisfactory?—They are very satisfactory where cottages are built upon the estates of large landed proprietors, or even small ones; but in some of what we call the open villages, where cottages have been built by speculators, they are as bad as bad can be.

7933. How far do you think that boards of guardians as local authorities might be trusted to make regulations about the dwellings of labourers, as to their size, the number of rooms, the privy accommodation, and similar provisions?—I think that the board of guardians might see that there was no overcrowding in cottages and might make regulations as to their general sanitary construction, but I do not think that they should be intrusted with arbitrary powers to compel every cottage to have three bedrooms, or things of that sort.

7934. But you think that regulations by boards of guardians as to the general sanitary condition of cottages might be carried out and would be submitted to willingly by large owners of property?—I think that generally by the large owners of property they would be most cheerfully submitted to. I have my doubts about the smaller men, who speculate as it were in cottage property. I might say in addition to that that since the passing of the Union Chargeability Act cottages have sprung up in a great many places where they were very much wanted, and in these large open parishes we have a great number of cottages which are now empty in consequence of the cottages being provided nearer to the place where the labourers work.

7935. In what way has that Act so operated?—Because before it was an advantage for owners to get rid of their poor into neighbouring parishes.

7936. And now people are more willing to provide cottages where they are wanted?—They certainly are, because the farmers say constantly to their landlords, "We have to pay just the same rates whether "we have these poor men living in the parish or not, "and we should like to have them nearer their work."

7937. Do you think that in Norfolk men can profitably speculate in building cottages?—Not to provide proper cottages at fair rents.

7938. But the speculation is made profitable by building inferior cottages?—Building very inferior cottages and charging very large rents for them.

7939. (*Mr. Shaw.*) Do you think that however the law may be amended, there must be a great deal in the practical working of it left to the discretion of those who administer it in sanitary matters?—I think so certainly; a great deal must be left to the local authority.

7940. Do you think that the guardians, as we know them, are a sufficiently intelligent body to exercise that discretion?—I would not like to speak of the guardians in towns, but most certainly they would be in counties; they are generally speaking the large farmers, and we are assisted in Norfolk (and I know it is so elsewhere) by the gentry and the clergy, a few of whom almost always attend.

7941. You do not think that there is a mass of intelligence and education which might probably be brought to bear upon sanitary subjects that is practically excluded at present because the men who possess it do not like to become guardians and mix in general parish business?—No, I think not; I think that those really scientific men who have the time at their disposal would become members of boards of guardians if it was necessary.

7942. There is a power under the Sanitary Act of 1866, as regards boards of guardians, in section 4, by which any sewer authority may "form one or "more committee or committees, consisting wholly of "its own members or partly of its own members "and partly of such other persons contributing to "the rate or fund out of which the expenses incurred "by such authority are paid, and qualified in such "other manner as the sewer authority may deter-"mine." And then they may delegate to them their power. That introduces a new element, that of putting on the committee persons not on the origina body. Do you think that it would make the law more effective if the guardians had the power of appointing a committee of that sort, so as to draw in the general intelligence of the neighbourhood on sanitary questions?—Speaking for the country, I do not think that that is necessary, but at the same time I am not prepared to state that it would not be well to put some such power as that in force to meet exceptional cases.

7943. As regards some intermediate authority, I understand you to say that it might be a good body for the execution of the greater kind of works?—Yes.

7944. That is to say, it should do the works which the smaller bodies would not do at all, but which would be exempted from their jurisdiction?—Yes; the greater works that would not be confined to the smaller districts; I mean such works as arterial drainage, or looking after the watershed of a district.

7945. Works which the local authority would not do at all?—Would not, and could not do.

7946. Would you also have that intermediate authority as an appeal from them in respect to works which they have the power to do; for instance, cottage regulation, and works of that sort of a discretionary character? Might it not be that the local authority might be intrusted with extensive powers

if they were liable to an appeal as to the exercise of them to some county financial board or some body of that nature?—Yes. I think there should be that power of appeal to some intermediate authority as there is now, I believe, to the quarter sessions. I know that we had a case in which the owner of a cottage refused to attend to the order of the board of guardians and provide privy accommodation. First of all, we summoned him before the magistrates, where the guardians were the victors. He then removed us to the quarter sessions, where again the owner of the cottage was vanquished; but he beat us in the end by clearing out all the inhabitants of the cottages, and therefore of course we could not further insist upon privies being built, and the result was that, in consequence of the protracted litigation, it cost us, I think, something like 400*l.* over and above the expenses that were allowed us by the quarter sessions, to vindicate the law.

7947. Still, is that an argument for an appeal, or not?—I think there should be an appeal; but there ought to be a very much cheaper mode of proceding than exists.

7948. It comes to this, you would have some intermediate appeal between the local authority and the Secretary of State?—Yes.

7949. The appeal in case of misbehaviour by the local authority should not be straight to the Secretary of State, but should be to an intermediate power?—I think it is better to have an intermediate authority, because the circumstances of the localities are so different that one inspector general for the whole country I do not think would be a good authority.

7950. (*Mr. Powell.*) Does the overcrowding of houses prevail much in the rural districts of Norfolk?—In some cases it does certainly; principally in those open parishes of which I have been speaking.

7951. But does not the very fact of the parishes being open give opportunity for competition, and so for the erection of new houses and a consequent reduction of the overcrowding?—Not very much.

7952. The houses are not sufficiently remunerative to induce enterprise?—No.

7953. Do you think that the people of Norfolk would submit to a system of registration, that any given house should not be entitled to receive lodgers except by virtue of a licence with powers of inspection?—I do not think they would like it, but I think it might be done, and I am sure it ought to be done.

7954. I fear that in Norfolk the system of cesspools still continues in the rural districts?—That is cesspools and dirt binns.

7966. In the immediate neighbourhood of cottages?—Yes, to a great extent; that is to say, the ashes and the refuse from the house are all thrown into one dirt binn. The liquid refuse is generally thrown into the garden.

7956. Then it is not the case in Norfolk, that you have cesspools which contain a great quantity of liquid refuse and springs or wells used for drinking within a few yards of those cesspools?—I think that such cases as those do certainly exist; and I might mention that quite recently an inspector from the Privy Council has been down to the borough of Thetford principally to remedy the evil that you speak of.

7957. But I fear that the evil is somewhat prevalent, at least in some districts of Norfolk?—You see that our water supply is generally derived from a very considerable depth; we very seldom have wells under 30 feet, and some of them are as much as 100 feet, and in cases of that sort I do not suppose that any serious detriment would result from these cesspools.

7958. I think the strata of Norfolk are generally porous?—Yes, mostly chalk.

7959. I understood you to recommend the authorities for country districts to be the guardians, and for districts of a larger size the vestries; in whom would you vest the authority to say whether a community was large enough to be governed by a vestry?—My idea is that there are certain things which belong by right to the parishes themselves, and that in those cases the vestry ought to be the power, but that there are general sanitary regulations which ought to belong to a board of guardians to embrace the whole district.

7960. But you would still keep in force the vestry as the acting authority?—I would still keep in force the vestry as the acting authority for certain purposes.

7961. Will you mention those purposes?—Particularly for the water supply say of a small town. It may be that the water supply is perfectly good in a town of double the size, and does not require any special action on the part of the vestry, but where it is required I think that that should be left to the vestry rather than to the board of guardians, for this very reason, that now each union is for all intents and purposes one parish as far as regards rating, and it would be very unfair to tax the whole union for the special benefit of this small town.

The witness withdrew.

(65.) Alexander Redgrave, Esq., examined.

7962. (*Chairman.*) You are one of Her Majesty's inspectors of factories?—Yes.

7963. I think you have a suggestion to make to this Commission as to a possible consolidation of duties in matters relating to the social condition of the people which you think might be carried out beneficially without interfering with the right of self-government by local authorities?—Yes.

7964. Will you be so good as to state to us what your views are?—Perhaps you will allow me to read this memorandum which I have sketched out, which will give the general ideas that I have upon the subject. "I propose one and the same means for enforcing all these subjoined regulations which bear directly upon the health and comfort of the people: Nuisance removal, overcrowding, Bakehouse Act, lodging houses, climbing boys, pollution of rivers, smoke consumption, employment of children and women in and above mines. It has been laid down recently as an axiom by Mr. Bruce that when acts are done for the benefit of localities, the locality, and not the country at large, should pay the cost. Assuming, therefore, that proposition as settled, and that legislation has already imposed certain duties upon the Government, I do not propose to touch those duties as already existing. The country would therefore continue to provide for and to pay for the inspection of factories, mines, and alkali works. With respect to mines and alkali works, the inspection required is that of persons possessing special qualifications, but I would take from the inspectors of mines any duties in regard to the employment of children and women and the education of the children, and place that portion of their duties under the inspectors of factories. The inspectors of factories have at the present time to exercise supervision over the condition of factories, the existence of nuisances therein, the ventilation, the suppression of noxious gases, and overcrowding, and I am now engaged in endeavouring to introduce a better state of things in such neighbourhoods as Spitalfields, Whitechapel, &c., but I am constantly met with the objection that it is not fair of me to enforce regulations only in a certain portion of works, while similar works are not subjected to the same supervision. Cases occur in which workpeople complain of nuisances in the neighbourhood of factories, but which we cannot remove. Little objection is made to the improvements suggested as improvements, but the objection is to the partiality of my proceedings. With respect to the Bakehouse Act there is great anomaly. The local authority is to prevent the employment of children in that part of a bakehouse in which the bread or confectionery is baked. The factory

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" inspector has the control of the other portions of " the establishment. All the points which I have " named, are of what I may call personal irregularities, " committed by one member of a community which " are offensive and hurtful to other members of the " same community, and I hold that they cannot be " dealt with impartially by another member of the " same community, whose livelihood depends upon " the voices and goodwill of the same community. It " is notorious that when questions of this nature are " brought before local boards, members cannot help " considering how the question affects themselves; " and it is almost impossible to dissociate personal " from public feeling in these home questions. I " propose therefore, without interfering in any way " with the functions of the authorities already con- " stituted, to empower the inspectors of factories to " enforce the suppression of things forbidden, in the " first place, when local authorities neglect their duty, " and, secondly, with the consent of the local autho- " rities; in both cases the charge of the performance " of the duties being borne by the locality. Such " authority is given to the chief officers of police by " section 16 of the Sanitary Act of 1866." Therefore it shows that the legislature intended some sort of supervision to be used over the local authorities in case they neglected their duties, and the officer of police being an officer locally paid, I presume that was the reason that he was mentioned in that Act. " When local authorities neglect either to appoint an " officer to perform the duties in respect to the " matters herein enumerated, or having appointed an " officer, the things forbidden still continue, the " inspector of factories of the district should represent " the same to the Secretary of State, who would give " notice to the local authorities that if the same state " of things continues for one month after the date of " the notice, the inspector of factories will proceed to " enforce the Act. If local authorities desire to " avoid the expense of appointing a special officer, " they may by resolution request the Home Secretary " to direct the inspector of factories of the district " to act. The sub-inspector will, acting under the " directions of the inspector, proceed to enforce the " statutory regulations. At the end of every three " months the inspector of factories will certify to the " Home Secretary the number of days during which " a sub-inspector has been employed in each locality, " and the Home Secretary shall thereupon make a " requisition upon the local authorities at the rate of " 1*l.* per day for every day of six hours during which " a sub-inspector has been employed in respect to such " local duty; such sum to be paid to the Treasury in " diminution of the expenses of the department. The " sum of 1*l.* per day is fixed upon, because the salary " of a sub-inspector commences at 300*l.* per annum, " and as the travelling expenses will as a rule be " small, it is well that the charge to the local autho- " rity should be rather under than above the actual " cost to the Government. There are at present two " chief inspectors between whom the whole of the " United Kingdom is divided. They are assisted by " sub-inspectors who reside in the midst of the works " to be inspected. The sub-inspector would be the " officer who would actually put the various regulations " into operation. They are all men independent of " the localities in which they are placed; they are " respected from their character and position, and as " a rule the Acts under which they now act are " observed through the reliance placed upon them and " their integrity; occupiers of works rarely giving " themselves the trouble to read an Act or an abstract " of an Act, and I am satisfied that they would " administer other Acts with a like success, and " secure that which has not yet been general, a fair " observance of sanitary regulations, at a cost of one- " half of what would be necessary under any other " organization. Although the administration of the " Workshops Regulation Act is in the hands of the " local authorities the inspectors have concurrent " jurisdiction, and it is by means of this concurrent " jurisdiction that I am enabled to obtain a very fair " observance of the Workshops Act, by the means of " the local authorities in my district. I should state " that the alternative proposition I have made would " probably not be adopted in the metropolis or in " large towns, where the payment of an officer is to " them only a small item of expenditure, but in the " smaller jurisdictions, where a fair salary is a large " item, and where it is more difficult to obtain the " services of a thoroughly independent officer, such an " organization as I have sketched out would be most " valuable, and the whole of the Acts would be " administered throughout the United Kingdom upon " one principle."

7965. Then generally speaking the sum of your proposition is that, retaining the existing local authorities, the factory inspectors might be made use of both to set them in motion and as an agency of the Home Office for carrying out works?—Yes; I think that they would to a very great extent be able to enforce the abatement of nuisances and to carry out the other matters that I have mentioned where they are entirely neglected in localities. In other respects, where the authorities are more alive, I think they would be perhaps the proper persons to set on foot an investigation, and to stir up the authorities to give effect to the Acts under which they are appointed. I especially found that opinion upon the effect of the Workshops Regulation Act, which is entirely placed under the control of the local authorities; but by stirring up the local authorities and by constantly keeping them to their work, in a very large number of towns and districts the Workshops Regulation Act is carried out. That is simply because the inspectors have concurrent jurisdiction, and they are able to appeal to the local authorities on the ground that there are regulations that must be carried out, and the local authorities cannot resist their appeal.

7966. But is there not some difference between the inspectors of factories making use of local authorities to carry out the Workshops Regulation Act, which is a portion of the Factory Act, and the factory inspectors being employed by the Home Office to enforce general local government not connected with factories?—I rather propose that they should simply enforce the observance of the regulations, not the adoption of local government.

7967. But would not most of the functions of local government be altogether outside the province and scope of a factory inspector's work?—I do not know that they would. The factory inspectors at present have to undertake the questions of overcrowding and ventilation in the works which they inspect, and also in the workshops which are under local authorities; and it strikes me that they could perfectly well exercise the same sort of supervision over private dwellings. When I say that factory inspectors might do that, I mean those who reside on the spot; they have an immense deal of personal acquaintance with their districts, they are above local prejudices and influences, and from that cause they have a great power of administering Acts and possess an influence which a local officer appointed locally has not.

7968. It may be that you are right as to the advisability of economizing staffs of inspectors, because perhaps the inspectors for various purposes are getting unduly multiplied throughout the country; and I think the Commission are very much of opinion that the Home Office requires more inspectors to enable itself to be informed of the default of local authorities; but what seems to me difficult in your suggestion is the use by the Home Office for general sanitary purposes of a staff of inspectors whose special business it is to look after the Factory Acts, of which the Workshops Registration Act is one, and the question arises whether the local authorities would not decline very much to communicate with inspectors whose official business was understood to be special and not general?—Of course the duties of inspectors of factories are under a special Act, and the reason

I had for intruding the subject upon you is that I think they might be utilized to a great extent; there is no necessity that they should be confined strictly to the performance of duties under the Factory Acts. I think that there being necessarily a very large number of them, and necessarily residing in a great number of places in the country, they could be utilized to carry their influence much further than they do at present. It would not be an immense deal more work to them than they have at the present time if they were to perform duties in the different localities in which they are situated in respect to overcrowding and nuisances. Those duties would not at all clash with their present duties. At the present moment the sub-inspector and myself are in frequent communication with local authorities as to the Workshop Act, and we have not experienced any disinclination on their part to co-operate.

7969. In devoting themselves to the subjects which you have enumerated, such as smoke consumption, lodging houses, pollution of rivers, and removal of nuisances, the factory inspectors would be travelling into very different subjects than those referred to them officially?—Unquestionably it is a new sphere of duty for them as far as those subjects are concerned, but then it strikes me that they are the very best persons to bring those matters under observation. For instance, take the consumption of smoke; no one is able to judge of that so well as the factory inspector, who has so much to do with factories. Again, as to the pollution of rivers, from going round in all parts of the country, and especially where there are factories, they would be able to give an excellent opinion as to the causes of it, and be able to assist in the removal of it.

7970. How far do you think your suggestion would apply to rural districts?—I do not see why it should not apply to rural districts, because the inspectors of factories go through every district.

7971. Would there not be a large portion of the country where they could not possibly undertake these duties, such as the more rural districts, say in the south of England?—I do not think that there is any town above the size of a village where the factory inspector does not go under the present Act. He is visiting, in point of fact, over the whole of the country. Of course, when the factory inspectors were appointed, many years ago, they had only to inspect cotton and woollen and worsted factories; now, by the recent legislation, they have to inspect every possible class of work, and a vast number of the places they inspect are absolutely in dwelling houses. I have mentioned the tobacco factories in Whitechapel and Spitalfields; a large number of them are absolutely in dwelling houses, and if we have to go into those dwelling houses for that purpose, we might as well go for similar purposes into those of other people.

7972. How far on the other hand would such inspectors be able to interfere with the councils of large towns?—I do not think that it would be necessary that they should interfere with them, because the councils of large towns generally take these matters up pretty readily. There is only one large town in my district, namely Sheffield, where the town council have shown any disinclination to take up the Workshops Act. In the metropolis the vestries have taken it up, and placed it in the hands of their medical officers. But it strikes me that there are a number of places, containing in the aggregate a large population where we go, and in which it is difficult to get the local authorities to move, and that by the exercise of a little Government pressure of that kind they would be moved as they would not under other circumstances.

7973. (*Lieut.-Col. Ewart.*) Do the factory inspectors at present always supervise the same districts?—Yes.

7974. And about what extent of area does each factory inspector take?—That depends entirely upon the mileage which he has to go over, with the number of works which he has to visit in that space. In London, for instance, there are three sub-inspectors, in Manchester two, in Sheffield one, in Leeds one. Scotland is divided amongst three, and in the four northern counties of England there are two; so that it all depends upon the amount of work that the man has to do, taking into consideration how much travelling he will have, and the number of factories in the district. In London for instance, each man has about 1,200 factories to look after because he has no great amount of travelling. In Scotland each man has perhaps 600 under his care because they are spread over a great area.

7975. How are the factory inspectors selected at present in respect to their previous professional training?—The sub-inspectors are selected by the Home Secretary; there is no special training for the office, but there is a special examination to be passed before they are appointed.

7976. As a rule, what professions are they generally taken from?—They vary; there are several amongst them who have been in the army, and there are men who have been at the universities, men who have taken honours, and others who have been called to the bar, and men of that class. What is necessary for a factory inspector above all things is that he should be a man of the world; it wants no special knowledge, but it wants a man to know how to deal with his fellow men, with the men that he meets with.

7977. Could you give us as an example the professions from which, say, the last three or four have been selected?—One was a barrister in Canada, one was a physician, and the one before them was a tutor; I do not know where, but he was, I believe, a scholar of Magdalen College, Oxford.

7978. The examination to which you allude is, I suppose, an examination by the Civil Service Commissioners?—Yes.

7979. There is no other examination?—There is no other examination.

7980. Would the present staff of inspectors suffice if the general health duties were added to their present duties?—Certainly not; it would require an increase of staff, which I anticipate would be paid for by the local authority. Any duty performed for the local authority should be paid for by that local authority. I do not propose that the Government should take upon themselves the performance of all those duties which properly appertain to the local authority, but that on the failure of the local authority the factory inspector should undertake it, and that the Treasury should be reimbursed the cost of the inspector.

7981. But do you not mean that he should be ordinarily going about the country and reporting if he sees matters wrong?—That would be done in the course of his ordinary duties, and if more force was wanted, other sub-inspectors would have to be appointed.

7982. You do not mean that additional inspectors would be required except for extraordinary purposes?—No.

7983. (*Mr. Powell.*) At present there are two classes of factory inspectors; there are Mr. Baker and yourself inspectors, and a considerable number of sub-inspectors?—Yes.

7984. In what position would you propose to have the inspectors?—In the same position as they are in now. The sub-inspectors living on the spot would administer the Health Acts in the same way as they now administer the Factory Acts.

7985. And would you have the relations between the inspectors and the sub-inspectors the same as now?—Precisely the same, in order to induce uniformity of practice throughout the country.

7986. But you would find it necessary to increase the number?—Of sub-inspectors possibly.

7987. And of the inspectors likewise?—I do not know that.

7988. What do you propose to do with the inspectors under the Home Office and the medical officers under the Privy Council Office?—I do not propose to interfere with the functions of any existing public department; the medical officers under the Privy

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Council are employed I apprehend simply on special subjects which require their special knowledge. The inspectors of factories only require the knowledge which is necessary for a man of the world to use in going through life.

7989. But if you had the system which you propose you would still retain the medical officers under the Privy Council ?—They would be necessary for all medical subjects.

7990. But the inspectors under the Home Office you would not retain, but would transfer their functions to the inspectors of factories ?—All those inspectors who simply perform administrative or executive functions I should place under one department. Those like the inspectors of mines or alkali works, or the medical inspectors, who must possess technical knowledge, must be under a different organization.

7991. What would you do with the gentlemen in the Local Government Office, Mr. Tom Taylor and Mr. A. Taylor, and their colleagues ?—I presume they would be necessary in the administration and working of the Acts.

7992. You would retain them and have the factory inspectors as well ?—Yes, certainly. The factory inspectors, I look upon as the executive. The other inspectors, the medical inspectors, the officers of the Privy Council, seem to me to decide scientific questions.

7993. I find from your report, and that of Mr. Baker, that a different opinion exists between you as to certifying surgeons. Would you state, without entering upon any arguments in reference to that difference of opinion, whether you find that the action of certifying surgeons and their interference has become unpopular ?—Unquestionably.

7994. (*Earl of Romney.*) Your recommendation is only as to the action of inspectors ?—Yes.

7995. You are giving no opinion as to what the central government should be in London ?—No; I simply mean that our department has a large inspectorial staff at present confined to the inspection of workshops and factories under certain conditions, and I think that they might be utilized for these purposes, whether acting as at present under the Home Secretary, or under any other central government authority.

7996. You acting under a central authority in London as you do now ?—Exactly the same.

7997. I was surprised to hear you say that there are inspectors for these purposes in every county in England, is that so ?—They move over every county. There are 40 altogether.

7998. Take Kent and Sussex, for instance, is that so there ?—Kent, Surrey, and Sussex form one district. There is one gentleman who visits the works in those three counties.

7999. But there must be so few factories to inspect in proportion there, that the work of the inspector would be infinitesimal ?—That is not quite so, because in Kent and Surrey and Sussex the inspector goes into every town. He inspects every bookbinder's shop, and every tobacco pipe maker's shop; however small the factory, the inspector really goes there ; so that it would be merely an addition to his duties, if he could give any help in these matters.

8000. (*Chairman.*) When the Sanitary Act was extended to agricultural matters, would these inspectors have to undertake that duty also ?—I have not the least idea of the views of the Government on that matter.

8001. (*Mr. Powell.*) You have stated, and so has Mr. Baker, that the action of the Factory Statutes has been greatly facilitated by the desire of the inspectors to spread information, and to attract sympathy on these subjects. Do you not think that officials engaged in carrying out the Sanitary Acts might generally promote sanitary reform by acting in the same manner ?—Yes; I think that the success of the last two Acts, the Factory Act and the Workshops Act, has been mainly owing to the good feeling and sympathy between the inspectors and the manufacturers.

The witness withdrew.

Adjourned to Tuesday next at 12 o'clock.

Tuesday, 3d August 1869.

PRESENT :

THE RIGHT HONOURABLE SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

The EARL of ROMNEY.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
Sir THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
FRANCIS SHARP POWELL, Esq.

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(66.) JOSEPH SNOWBALL, Esq., examined.

8002. (*Chairman.*) Have you acted as land agent for many years in the counties of Northumberland, Durham, Yorkshire, Lincolnshire, Staffordshire, and Buckinghamshire ?—I have, and in other counties as well.

8003. Are you land agent to the Duke of Northumberland ?—I am his Grace's chief agent.

8004. Does your agency make you acquainted with the local government not only of country districts but of towns also ?—It has done so.

8005. What is your opinion generally as to the local authorities undertaking the sewerage of towns ?—I think it has a very good effect when it is perfectly done.

8006. Do you consider that generally it is perfectly done ?—There is great want of uniformity in the manner in which it is done ; and in those cases (for want of proper supervision) you find occasional defects in the system of drainage.

8007. We are not now entering into the comparative merits of different systems, but will you tell us generally, without entering into detail, what system you think is the right one ?—I am not quite prepared to give an opinion upon that point, but what I should recommend would be a uniform system, and one which would be generally carried out throughout in towns. Sometimes a town is divided into sections, and those sections are not all working in harmony ; it is certainly better that the whole system should be under one general superintendence.

8008. Do you mean that the management of all parts of one town should be under the superintendence of one body in the town, or do you mean that a central body should lay down a plan for the sewerage of all the kingdom ?—I think that a central body ought to lay down rules to guide the drainage of every town, and that the towns should be made to conform to that system, with such variations, of course, as the peculiarities of each town may require.

8009. I presume if the system were a system of drainage by main sewers you would disapprove of any

discharge into a river?—I would certainly disapprove of that.

8010. Large cities like Manchester carry on more or less the ashpit system; would you propose that the central authority should so far enter into detail as to forbid such a system?—I should not say that they should altogether forbid it, but they ought to have a certain power of control over the ashpit system.

8011. You think that it should be a general regulation which should be capable of being applied to various systems?—I think so.

8012. But if there were a general outfall, it certainly should be forbidden to be made into the river?—Yes, certainly; or into open pits. The sewage is very often carried off from a town and taken into some hollow or place adjoining, which is very offensive to the neighbourhood around the discharge. I know many cases where it is carried out of the town so as to be completely rid of it, but allowed to stand in a putrid state in the country.

8013. As you are agent for land in so many counties, have you considered how the system of sewage in different towns upon the same river could be carried out under one authority?—I think it could be done. My opinion is, that the central board should lay down rules for the government and management of the drainage of every town throughout the course of the river. I would not have it a local authority.

8014. Supposing the authority in any town prevented the pollution of a river, would not their labour be in vain if a town higher up the same river continued to pollute it?—Yes; but that, I presume, could be checked by the central authority.

8015. You have not specially considered the subject of appointing conservancy boards with authority over the whole basin of a river?—No.

8016. I understand from your answer in which you state that the central authority, which means the Home Secretary, alone should control those local authorities, that you would not propose to constitute boards representing several towns connected with one river?—I think they would be better as separate boards, that is to say, the board controlling the river as a conservancy should not be the board having to deal with the sewage.

8017. Can you state from your own experience whether the sewage discharged from a town can be profitably utilized?—I think it could be utilized, but perhaps not so as to pay the expense of the utilization. I think that the cost of it in many cases would be more than the value of the manure when utilized.

8018. In the counties over which you exercise your agency, how, generally speaking, are the country villages drained?—They are generally drained very badly. Hitherto there has been, I believe, very little attention paid to the drainage of villages.

8019. Do you consider that a country village ought to have a system of structural drainage for the whole village?—I think so.

8020. Would not that be too expensive a work for country villages?—Much would depend upon the extent of the village. If it is a small village of course the expense would be less; but where it is a very large village, belonging to different owners, it would be necessary to have some power to bring in all the owners to bear their share of the expenses of the drainage.

8021. In villages so small that you think it would be hardly worth while to make one structural system of drainage, how should the contents of the privies be disposed of?—It would be done in the ordinary way, I suppose, by cleaning out the soil; but for want, perhaps, of some one or other with power to insist upon its being done it might be allowed to accumulate, to the great disadvantage of the occupiers of the cottages.

8022. What is the best authority for controlling the sanitary affairs of a village?—I think that the supervision should be under an inspector legally appointed; but where villages are isolated you have a difficulty in obtaining the inspection necessary.

8023. Can you tell me what power the board of guardians have?—The board of guardians have the power, I believe, of appointing inspectors.

8024. And what power has the vestry?—The vestry has the same power, I believe, if formed into a local authority.

8025. Do you know any vestries in your counties which have formed committees for sanitary purposes?—No, I do not know that there are any in the county of Northumberland, and I do not know of any in any other county.

8026. What sort of inspectors do the boards of guardians generally appoint?—They are men of an inferior description generally, men who are really in want of employment and are glad to get it, and it is a sort of duty which is not well paid for.

8027. And do they do their work?—I am afraid they do not do their work; it is not to be expected, in consequence of their small pay, that they should.

8028. What class of men are they; are they in any cases relieving officers?—Yes, they are in some cases relieving officers.

8029. How are the medical men paid by the poor law authorities in your counties?—They are paid salaries, but not large ones I believe.

8030. Which do you think is the best board of authority for all sanitary purposes in villages, the vestry or the board of guardians?—The board of guardians. But if even the board of guardians are appointed, there is so much local prejudice and feeling that I do not think matters are thoroughly looked after. There is a want of power to compel the parties who are really appointed as the proper authorities now to do their duty; and you will find in small towns and villages there is a prejudice or feeling against each other or for each other which operates against their doing their duty.

8031. What authorities do you mean require compulsion to do their duty?—The local authorities. I think that there should be inspectors appointed who would be answerable, not only to the board as the local authority, but to the officers of the central board, for the performance of their duty.

8032. What sort of person do you mean?—An inspector for the general carrying out of the sanitary laws.

8033. Do you mean that the Secretary of State for the Home Department should have an inspector or inspectors going about the country?—Yes.

8034. What should their duty be?—Their duty should be to go from place to place to see that the local authorities are really doing their duty.

8035. Supposing they found a great number of nuisances not removed, what should they do?—They should have power to take proceedings against the parties neglecting their duty.

8036. Do you mean on the part of the Secretary of State?—Yes, on the part of the Secretary of State. These inspectors would be acting as public officers who would be seeing that each local board was doing its duty.

8037. How are villages generally supplied with water?—Not well supplied generally, especially villages where they have not a sufficient number of inhabitants to be at the expense of supplying themselves. I know several villages at this moment badly off for water, and the inhabitants have not the means of obtaining it for want of funds, and for want of power to obtain funds.

8038. What sort of supply could they get if they had the means?—The supply probably would be in the hands of the adjoining landowners.

8039. Do you mean from wells or springs?—From springs and wells.

8040. Do you mean that they have not money enough to dig wells?—They have not money enough to carry the water from those springs and wells from a distance to the villages for the supply of the inhabitants.

8041. Is not that generally done by the landowners?—It may happen that the whole village may belong to a great many owners who are not owners of the adjoining lands, and therefore have no power of

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getting the water from the adjoining lands to supply themselves.

8042. Do you mean where they have to get a supply from a distance?—Yes, from a distance; probably pipes would have to be laid down from those springs to the villages, and the inhabitants of the village and the owners of the land may be two different parties. I know a case at present where a considerable village is deficient of water. The adjoining landowner is quite willing to allow them to come upon his land to get water, but they have not the pecuniary means of getting it, nor have they any legal power or machinery by which they could obtain the water or pay the expense of laying down pipes. They have no means of raising money to do it, but if by any authority the inhabitants could have power to go to adjoining lands to get that water, and to raise the means of doing it, it would be a great benefit to the inhabitants.

8043. You are aware, I presume, that under a recent Act they have the power of passing through lands for that purpose?—They have the power of doing that, but I think they have no means of raising money to do the works and charging it upon the property. I know a village at this moment the inhabitants of which are really very badly off for want of water, and the occupiers of the houses would be very willing to pay a fair and reasonable charge for the water, but they believe there is no legal power at present in existence to enable them to borrow money for the purpose of doing those works.

8044. What is the population of that village?—I should think it is about from 500 to 600 inhabitants.

8045. The 6th section of the Sewage Utilization Act of 1865 is as follows:—"A sewer authority "shall pay all expenses incurred by them in carrying "this Act into effect out of the fund or rate in the "schedule in that behalf mentioned, and shall have "all such powers of borrowing money on the security "of such fund or rate as local boards have of bor- "rowing money under the Local Government Act, "1868." Are you aware of that section?—I was not aware of that section, but then comes the question of how far the routine which is necessary for obtaining the benefit of that Act would be an expensive routine. I have an idea that it would be highly desirable if through a central board such powers were given in cases of this kind to raise money either through the Lands Improvement Company, or some other simple mode, and do the works under the superintendence of some qualified authority, charging the money borrowed upon the rates.

8046. In that village of 500 inhabitants is the difficulty of getting water such that the different landowners could not supply a pump for each of their properties?—The village is adjoining the sea coast, and I do not think that they could obtain water by pumps: in many cases you will find that pumps put down to supply each occupier with water would be a very expensive affair. The aggregate expense of all those pumps for each house would be far more than the laying down of pipes.

8047. Do you think that the authorities in country districts should have power to control and regulate buildings?—I think they ought to have a limited power, and it ought to be gently dealt with; as I said before, local boards have very strong prejudices, and unless it is controlled by a central authority it is a dangerous power to give.

8048. Do you think that the authorities in towns have sufficient power for regulating buildings?—I think they have.

8049. But in country districts you think that they have not?—In country districts I do not think they interfere at all; I think that they should to a certain extent, especially with respect to building cottages and their requisite conveniences in improper situations.

8050. Supposing the controlling authority to be the board of guardians, how far do you think that they would be able to lay down regulations as to labourers' cottages which the great landowners would willingly conform with?—I do not think that the landowners would be willing to conform by any means.

8051. Do you think that the boards of guardians in the counties with which you are acquainted should hardly have power to impose regulations upon landowners as to the building of their cottages?—Certainly they should not.

8052. Generally speaking how are the labourers housed in those counties?—In Northumberland especially there has been a wonderful improvement within the last 20 or 30 years in building cottages.

8053. Does the rent that the labourer pays cover the expense of building the cottage?—The rent is not more than one-half the interest of the money expended, independently of the land.

8054. In that case are there many people who build on speculation?—None.

8055. How are those labourers housed who do not work upon the estates of the different landowners?—There may be more cottages built at one time than necessary for the use of the estates, and occasionally such people may get into one of those; but as a rule no more cottages are built upon estates than are necessary for the use of the labourers employed upon them.

8056. Are the cottages generally attached to farms?—Generally the cottages are attached to farms.

8057. Do the cottagers pay rents to the farmer or to the landowner?—In Northumberland we have a class of people called hinds who work for the farmers, and each farmer has cottages, in which he houses his workpeople. These he has rent free, but taken into consideration and estimated with the land in the rent between the landlord and the tenant.

8058. That is to say, the value of the house is taken into consideration between the landlord and the tenant, and also taken into consideration in the wages paid by the tenant to the labourer?—Just so. Agricultural labourers do not pay as a rule any rent whatever for their houses, they have their houses as part of their wages.

8059. (*Mr. Russell Gurney.*) Is that peculiar to Northumberland?—It is, I think, peculiar to Northumberland. I have scarcely met with it in any other part of England, not generally as a rule.

8060. (*Chairman.*) Is it not the case in Durham and Yorkshire?—No, it is not, generally.

8061. In Durham and Yorkshire do the cottagers pay rent to the landowners?—Yes, they pay rent to the landowners. There may be exceptions, and occasionally it may be part of the arrangement that the cottage tenant has his cottage as part of his wages, but I believe it is very rare that happens either in Durham or Yorkshire.

8062. Do the farmers in any part of the counties with which you are acquainted hold their farms on leases?—In Northumberland a good many do; in Durham they do not so much. All the principal farms in Northumberland are held upon lease, although as regards the Duke of Northumberland I do not think there is a single lease existing. The tenants go on for generations without being disturbed.

8063. Putting out of the consideration those new cottages which you have alluded to as built, I suppose, principally by the Duke of Northumberland, are the cottagers in that part of England well housed?—Yes, they are well housed generally.

8064. Are the rooms that they live in generally as large as they ought to be, and have they a sufficient number of bedrooms?—The rooms are larger than you will find in any other part of England, but they have a smaller number of bedrooms than you find in other places, as far as my experience goes. The taste of the Northumberland labourers is in favour of a very large kitchen, in which the father and mother sleep at nights, and their children are put into the bedrooms.

8065. (*Mr. Russell Gurney.*) What number of bedrooms do they generally have?—One or two; seldom more than two. One or two bedrooms in addition to the

sitting room is as much as they have; but the sitting room itself or the kitchen is from 16 to 20 feet long.

8066. Do the sons and daughters sleep in the same rooms?—No, not in the modern cottages; the kitchen is divided by box beds, which stand across the room, and perhaps the younger children sleep in some of those box beds, which form really rooms of themselves, and the older children are taken upstairs to separate rooms.

8067. Are there separate rooms for boys and girls?—Yes.

8068. (*Chairman.*) What should you think is the average cost of such a cottage?—The cost has increased enormously by the increase of wages latterly, and I think the cost of a three-roomed cottage at present is from 130*l.* to 150*l.*

8069. Are they built of stone?—Yes, principally.

8070. Are they built singly or in pairs?—In both ways. They are a little cheaper when they are built in pairs.

8071. What sort of rent would a cottager have to pay for a cottage which costs 150*l.*?—I said that they paid about one half the interest of the money, but really they seldom pay more than about from 2*l.* to 3*l.* a-piece for those cottages.

8072. How much per cent. upon the cost?—According to that it is not much more than 1½ or 2 per cent. upon the outlay.

8073. How much per cent. upon the original cost would a fair interest be?—I should think 7*l.* or 8*l.* I do not think that anyone would build them as a speculation unless they received five per cent., or from that to six per cent. upon the outlay. I may explain that in those cottages occupied by the agricultural population they have a dairy, also a pigsty, together with a privy and an ashpit, and all those things are taken into consideration with a cottage in the cost I have mentioned.

8074. (*Earl of Romney.*) Are they fitted with ovens and boilers and other conveniences?—Yes; the Duke of Northumberland has latterly put in all those things and made them perfectly comfortable, so that a person may walk in and take possession at once.

8075. (*Mr. Russell Gurney.*) Would you give the power to the local authority to give notice to the landlord of a cottage, which is in so bad a state as to be prejudicial to its inmates and to its neighbours, calling upon him to remedy it, and if he neglected it to remedy it themselves?—I certainly would.

8076. But curbing it with an appeal?—Yes, exactly so, because you do find in many places small landowners who perhaps have not the means of rebuilding cottages which are in a most disreputable state, and the occupants of the cottages themselves in a most disorderly condition, and there ought to be a remedy against that certainly.

8077. (*Chairman.*) Do you think that there ought also to be a power, upon a certificate of its necessity, to destroy furniture or other materials likely to cause a spread of infection?—I think that there ought to be that power, inasmuch as it might stop the spread of disease.

8078. Have you known cases where the want of that power has been mischievous?—I have.

8079. Do you think that as the result of the arrangement it would be a good thing if it could be brought about that wages should be so far raised as to enable the cottagers to pay an amount of rent which would be a real *bonâ fide* interest upon the outlay in building their cottages?—I think it would, but there would be very great difficulty in getting it done and in working it out. There is no question of this, that the building of cottages for agricultural labourers is not a paying concern, but then it is an evil which you cannot avoid. A gentleman owning property must have his property cultivated, and he must build cottages and engage his labourers upon the best terms he can; and I believe the better the cottages, and the more comfortable they are, the more likely he is to get good labourers, and at a cheaper rate.

8080. If it could be possible to bring about such a state of things, would it not be better that the wages should be so far raised as to enable the cottagers to pay a rent representing real interest, rather than that the landlords should be building their cottages at half the proper profit, and that there should be a vague understanding that the rest of the value was somehow recovered otherwise?—There is no doubt that that is the true principle, but the custom, especially in Northumberland, is such with respect to the employment of labour, that a large proportion of agricultural employers, colliery lessees, and manufacturers undertake to find their labourers cottages altogether free of rent, and engage them at probably 2*s.* a week less, or something like that, on account of their cottages. I am afraid that it would be an arrangement very difficult to accomplish, to compel the employers of labour to pay an equivalent for their cottages.

8081. Do the farmers who have leases pay for the repairs of their own buildings?—Ordinary repair they do, but not anything substantial, such as walls or main timber; all those are kept up by the landlord.

8082. Are there any cases where the farmers having leases build cottages for their own labourers?—None that I am aware of.

8083. Or do they house them in their own buildings?—No. It is an understood thing that the landlords supply the cottages, and the farmers take them as an accommodation to the farm, and their value is estimated in the rent of the land.

8084. Are the unions very large in those northern counties?—They are; many of them extend for many miles.

8085. Are the boards of guardians well attended?—I do not think they are.

8086. Supposing the boards of guardians to have all local sanitary functions given them, do you think that the boards which now meet would discharge those duties well?—I do not think they would; I think they are very indifferent, many of them, about attending their present duties, without having additional duties put upon them. It generally falls into the hands of two or three who are fond of public duties, and the main body of guardians do not attend, excepting upon special occasions.

8087. Supposing that there were guardians specially elected by the ratepayers for the purpose of local government and looking after drainage and water supply, and the removal of nuisances, and all such things, do you think that a specially elected committee would meet regularly for the purpose?—I am afraid not, without they were compelled to do so by some superior authority.

8088. Do you think there could be such power in the central board in London to compel them to act?—I question very much how that power could be brought to bear upon their constant attendance.

8089. Do you know any vestries which actively look after the sanitary condition of their villages?—I do not. Unless it is looked after by the landlord, as far as my experience goes, it is very seldom or never attended to.

8090. Do the magistrates who are *ex officio* members of the board of guardians attend?—Not regularly; in fact they attend very irregularly indeed.

8091. I am afraid, from your experience, that we have not much prospect of getting a good local authority in country districts?—I am afraid not. I do not think that the local authorities, so far as my experience goes, have sufficiently attended to their duties. I am of opinion that some such authority as a central board would be necessary, to keep them to their duties.

8092. Are you talking equally of all the counties that you know?—I am speaking of other counties as well as Northumberland, but my experience has been greatest in Northumberland and in the county of Durham.

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8093. Do you think that if country authorities, the boards of guardians for instance, had powers of local government given them, the mere fact that such powers were given them would lead them to take more interest in the subject?—It might have that effect, but as far as my experience goes of farmers and men who have their other duties to attend to, they very rarely leave those duties to attend to extraneous duties of that kind.

8094. Do you know many cases where the want of attention to those subjects has created ill-health in districts?—It is difficult to trace ill-health to any particular neglect, but there is no doubt, from the medical reports one reads, that such is the fact, and that it has been traced to neglect of duty. For instance, the drains in a town may, for want of proper supervision, get out of order and create pestilence without anyone almost knowing about it. There is one other point which I should wish to refer to, and that is with regard to the utilization of sewerage. I cannot help thinking that through some power or other the towns themselves should be compelled to utilize their sewage, so that it should be made of some value to sell to farmers and to others, who would readily purchase it at its value, under the test of some analytical chemist, when so manufactured; under such a guarantee farmers would certainly buy it for the improvement of the land.

8095. Do you think it better that the central authority should compel the adoption of a plan, or do you think it better simply to say, You shall make good drainage, and then leave the place to find the most profitable way of doing it?—I think they should be compelled. I constantly see adjoining villages and towns, which are drained under their Boards of Health; the sewage is either, as I said before, turned into a stream of water, or carried into some pond, where it is allowed to evaporate, and remain a nuisance to the neighbourhood.

8096. Do not you think that if towns were compelled to abate a nuisance they would, as a rule, find out the most profitable way of doing it?—Yes, if they be compelled. I am satisfied that, although sewage manure may not be profitable to manufacture as a speculation, if the towns were compelled to manufacture it, its value would be recovered. Suppose it costs 4*s.* per ton to manufacture, it might be sold for 2*s.* per ton to the farmers for use on the land; a division of the cost would be made between the town and the country in utilizing the sewage for a manure. It would always be taken at its value.

8097. (*Mr. Powell.*) You said that the sewage should not be allowed to discharge into a river, or a pit, or a hollow. Have you found cases where the sewage disappears from the surface of the earth, and becomes accumulated either in some strata sufficiently porous to receive it, or in actual hollows, as for example in mines?—Yes, that points to the necessity which I have just now mentioned of having sewage utilized in some way or other, that it should not be sent off either into a river or into a hollow, because we do not know where it goes to.

8098. You think that the law should be made strong enough to prevent persons disposing of their sewage by causing it to be swallowed up in the bowels of the earth?—Just so.

8099. In other words, you ought always to know what becomes of the sewage?—Yes, just so.

8100. You suggest that the central authority should lay down certain rules for the observance of the community in the drainage of their towns. Could you give us a sketch outline of the nature and extent of those rules?—It is more belonging to an engineer than it is to myself, but what suggested to me the necessity of doing what I now propose should be done, was the effect of drainage upon the country. Before the 2,000,000*l.* loan was granted by the Government for the drainage of lands, there was no regular or complete system of land drainage, but as soon as that 2,000,000*l.* was allowed to go out for the purpose of being applied in drainage throughout the kingdom, the very best rules that could be devised were laid down by the Inclosure Commissioners for its being expended, and under those rules I believe the drainage of the kingdom was very much improved.

8101. You would rather suggest an Act of Parliament giving some London authority power to lay down rules, than that the Act itself should contain those rules?—Exactly so.

8102. Has your attention been directed to earth closets as applied in country places?—Yes, it has.

8103. Do you prefer it to the use of a privy in country places?—I do, provided their use could be insisted upon; but unfortunately cottagers are prejudiced against it, and the difficulty is in getting is used as it ought to be used. In some cases upon the Duke of Northumberland's property they have been put in, and we have difficulty with the cottagers to make them use them.

8104. Do you mean Mr. Moule's system of earth closet?—I am not alluding to any particular system, but I mean where earth could be used in neutralizing the stench in the same manner as you indicate.

8105. Do you think that it might be conveniently used in a scattered population?—I think it might, but then it requires more strict supervision than any other system.

8106. You think that the Legislature ought to be cautious how far it gives the authorities the power to enforce the use of earth closets?—I think so. It ought to be cautious certainly.

8107. You have stated that local boards have prejudices; do you mean prejudices for or against individuals, or prejudices on the subject generally?—Prejudices for and against individuals. For instance, in order that I may make myself understood, it might happen a board of health might be composed of a variety of manufacturers, and those manufacturers themselves might be creating nuisances which neither the one nor the other would like to interfere with.

8108. Do you think it would be convenient or possible to give a power of appeal against a local authority where that local authority allowed breaches of byelaws, and those breaches of byelaws were really mischievous, as for example where they allowed the violation of a byelaw, and houses were badly built in consequence of that violation?—I think so, decidedly.

8109. You have stated that the guardians would be resisted by the owners of property, and you answered other questions which were put to you in which guardians were named; would your answers to those questions equally apply to all local authorities, however elected?—Yes, I think local supervision generally is open to abuse; it is perhaps rather a bold thing to say, but there can be no doubt that in local authorities abuse does creep in which requires checking by some superior authority.

8110. Do you think that that supervision and control would be exercised in a beneficial manner by a county authority intermediate between the local authority and the central board in London?—I think it would, in fact I think it would have to come to a county authority on account of the convenience of working it.

8111. Could you suggest that authority?—It requires more consideration than I have given to the subject. I have thought of the chief constable, but I do not know that it would quite come within the duty of the chief constable.

8112. Do you think that the police would act well as inspectors of nuisances in country places?—Yes, they would, I think.

8113. Are there many instances in the district with which you are acquainted where the manufacturers, using the term generally as applying to maltsters or millers, and the rest, have a small property on which their establishment is placed, and give occupation, thus causing a demand for houses, but do not own land whereon houses can be built?—Yes, that very often occurs.

8114. In that case it is clearly not the duty of the

landed proprietor, I presume, to supply cottages?—Certainly not.

8115. And the owner of the manufacturing establishment has not the land to build them on?—That is so.

8116. Then, practically, what means do you see of supplying cottage accommodation in such a case?—There seems no means of doing it at all that I can see. If a man is so imprudent as to place his manufactory upon a spot where he cannot get land adjoining to build upon, he runs great risk of being deficient of the labourers he would want.

8117. Have you not seen great inconvenience in those cases?—I cannot say that I have seen much inconvenience in that respect, because anyone about to build a manufactory must see the necessity of first looking for dwellings for his people. I cannot say that that has come across my observation.

8118. Do you know much of Buckinghamshire?—Yes.

8119. Is there not great difficulty in the water supply of some of the districts in Buckinghamshire?—Yes, I believe there is, but I have not felt it so bad there as I have in Northumberland latterly.

8120. (*Earl of Romney.*) Do you live at Alnwick?—No, I live nearer Newcastle, but I have a house also at Alnwick.

8121. But you know Alnwick?—Yes.

8122. Do the houses there belong to one proprietor or to various persons?—To a very great number of proprietors.

8123. In what condition are they generally?—I should think, taking them as a rule, those fronting the main streets are in a very good condition; but some of those in the back streets are in wretched condition.

8124. How are they supplied with water?—They are tolerably well supplied, but they are applying for a further supply from the Duke of Northumberland from springs on his estate.

8125. How is the drainage?—The drainage is very perfect, but it drains into the river, and all goes away to waste.

8126. It is a very serious loss, is it not, to the country in an agricultural point of view?—Yes, no doubt.

8127. You stated, did you not, that you thought that it would be very desirable that this material should be employed for agricultural purposes. In ordinary country villages where they have privies what is done with the soil in that case?—That is invariably taken to the land.

8128. Then it does not want any coercion from any superior authority to compel the farmers to take it as manure?—I do not think it does. Perhaps the farmers cannot at the right time go and take it away, and there wants some authority to compel their being cleaned out at certain times.

8129. Is it the practice to dig holes under the privies?—They have ashpits in connexion with their privies, and the nightsoil makes its way into the ashpit.

8130. Have they any gardens?—Yes, they all have gardens.

8131. Why do not they use it in their gardens?—I daresay they do in some cases, but generally the farmers take it away with the ash.

8132. But the farmers do not come often enough, and it is left to accumulate?—Yes, they do not come often enough. That does not apply generally, but it occasionally does require attention.

8133. In the neighbourhood of Alnwick are there houses enough for the population?—Yes, I think there are. There is no want of houses there; there is no manufactory in the neighbourhood, or anything of that sort, to create an extra demand for houses.

8134. Higher up in the country how is it?—The landowners in Northumberland have been building cottages very largely indeed within the last few years. I do not know any county in England where a larger number of cottages have been built for agricultural labourers.

8135. Was the want of them very great?—The want was great, as the old cottages were excessively bad; but I am glad to say there is a spirit amongst the landowners in Northumberland for providing the labourers with the best cottages possible, and they are very much improved; the Duke of Northumberland has built and is building 40 or 50, and sometimes more, in the course of a year.

The witness withdrew.

(67.) Philip Henry Holland, Esq., examined.

8136. (*Chairman.*) You are medical inspector, are you not, of the burial department of the Home Office?—I am,

8137. What is the burial department of the Home Office?—My business is to inspect burial grounds, and report upon their condition to the Secretary of State.

8138. Under what Act does that department exist?—There are several Acts generally called the Burial Acts. I cannot enumerate them just now by their exact titles.

8139. How far is that department a part of the Home Office?—I report directly to the Home Office. Perhaps the term department may not be quite correct; it is subordinate to the Home Office.

8140. Is your department a portion of the Local Government Act Office?—Only locally. I have rooms in the same building, but I am not connected officially with the Local Government Act.

8141. You do not report to Mr. Taylor?—No; I merely occupy rooms in the same building. I report direct to the Secretary of State.

8142. How many years have you held this office?—Since the end of 1853.

8143. Were you employed by the General Board of Health before 1858?—I was.

8144. Have you any suggestion to make as to the relation of local administration with general supervision?—For many years past, 25 years or more, I have been very much connected with questions concerning the public health, and I am convinced that the best mode of administration is by united action of the general and the local authorities—not by either alone: I may describe it as local management and general supervision. I believe that to be the best and most satisfactory mode of working such Acts as the Public Health Act.

8145. Have you formed any very definite opinion to what extent general supervision should interfere with local action?—I think the Burial Act is a good illustration of that. By the Burial Act the local burial board has to select a site for a burial ground, and that site is submitted for the approval of the Secretary of State, and the Secretary of State always is recommended to approve unless there is some distinct reason why he should not. He is never recommended to disapprove for the mere purpose of improving the plan, but only when there is a positive objection to what is proposed; the effect being to leave the choice with the local authority unless it is a decidedly bad choice.

8146. Is it your opinion that the local boards have generally to be restrained rather than urged on?—That is my experience with respect to burial boards that they are much more frequently inclined to make a more liberal provision than a less liberal provision than is strictly necessary.

8147. Do you think that it would be generally so in other subjects?—I cannot say.

8148. Is not the question of closing an old burial ground different from that of choosing a new one?—Very different, because the question of closing is a question of evidence not of predilection. For instance in choosing a new site the burial board may very properly consult the wishes of the ratepayers, their tastes and convenience, but in closing an old one it is

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a question of safety, to be decided by evidence, not by voting.

8149. As to the closing of old burial grounds the Government decides that point, does it not?—Yes, the Government decides upon that, it is the Secretary of State in effect, but the Queen in Council in form.

8150. But the local authority subject to approval chooses the new site?—Yes.

8151. Should you extend this generally to other sanitary arrangements?—I would extend it to a reasonable extent. I think the question of whether a cause of ill health ought to be removed or not, is a question of evidence which should be decided not by voting, but the question of how it is to be removed, if there are several ways, is a question which the local authorities may very properly decide themselves.

8152. The evidence being upon the condition of the graveyard being dangerous to health?—Yes, or any other cause which is injurious to the public health. For instance take this case, there are many towns in the north of England which are filthy to a degree from the nightsoil being kept in the town. The question whether that nightsoil ought to be removed or not is a question of evidence, the question of how it is to be removed is a question for voting to be decided according to expediency, but it ought not to be allowed to stay there, because it is destructive to life, and that is a very important distinction.

8153. Do you consider that there is a difficulty in getting the best class of ratepayers to serve on local boards?—It is a matter of constant complaint, in fact I may say of almost universal complaint, that it is very difficult to get them.

8154. What does this difficulty arise from?—It arises from many causes, but I believe the chief cause is that the best class of ratepayers do not choose to subject themselves to the trouble and annoyance and risk of rejection by offering themselves. Unless they are nearly certain of being elected, they do not choose to undergo the trouble of election.

8155. Would you propose their being constituted by any other mode than by election?—I think that difficulty might be obviated very easily by allowing the minority as well as the majority to elect; that is to say, the minority to elect the minority of the representatives, and the majority the majority.

8156. Do you mean some sort of minority representation, such as we have in elections to Parliament?—Yes, I do not say exactly what, but some means of minority representation.

8157. Do you think that the better class and the richer people have not got their interests represented fairly now upon local boards?—I do not think that the more educated class have. I am not sure about the richer class, but the more educated class do not get sufficiently represented now, I think.

8158. Do you think that the owners of property as well as the occupiers are sufficiently represented?—Very often not.

8159. And you think that the absence of the better class diminishes the authority of the local board?—Very materially, and the respect in which it is held by the public.

8160. Have you any other suggestion to make to the Commission?—I should like to add that I base the opinion about the union of the central and the local authority, upon the experience that it works very easily and smoothly in the administration of the Burial Act; there is scarcely any grumbling, which is a very important thing. During my 15 years experience I have never had what may be called a collision with any local authorities; either they have convinced me, or I have convinced them, and the fact of having the local authority to manage carries public opinion with the local authority. The public have always fully and cordially acquiesced in what has been done, which they would not have done if it had been done for them and not by them. I believe that the very satisfactory administration of that Act has been a convincing proof of the importance of uniting the two authorities.

8161. Have you the use of any inspectors yourself?—No, I do it all now. The work has very much diminished since I began; a great many places have been put right, and therefore the work that remains to be done is not so much as what had to be done at first.

8162. Will your office gradually expire as its work is completed?—I think it will be a long time first; there are constantly fresh cases occurring; it is impossible to tell that.

8163. (*Mr. Powell*). In going down into the country to decide as to the closing or otherwise of burial grounds, am I right or wrong in my supposition that your leaning is in favour of closing burial grounds?—I have no feeling at all.

8164. But your practice is to close the burial ground in a doubtful case, is it not?—Not in a doubtful case. In a doubtful case my practice would be to half close it, that is, to leave it open with considerable exceptions.

8165. Could you explain those exceptions?—I had a case yesterday where there was conflicting evidence, whether a churchyard was full or not, and after hearing all the evidence I came to the conclusion that it would be safer to try to close the churchyard with a good many exceptions—excepting those who had a particular wish to be buried there, such as the near relatives of those already buried.

8166. When you go down to a place and you find that a burial ground must be closed without doubt at the end of a few years, and there is a doubt as to whether it should be closed at the time of your inspection, seeing that deferring the closing will lead to a second inquiry and a second expense, should you order at once the closing which you see is inevitable at the end of a short time?—I think I should recommend that burial ground to be closed after an interval, because it always takes time to procure a new one.

8167. Could you give an order to close at the end of two or three years?—Yes.

8168. There are certain clauses in the Public Health Act, 1848, in the Local Government Act, 1858, in the Local Government Amendment Act of a subsequent year, and in the Sanitary Act dealing with burial grounds, do you consider that those clauses are superseded by the Burial Act?—I think they are, or rather I think that most of them are embodied in the Burial Act.

8169. But I observe that one of the clauses is in an Act later than your Burial Act, namely, the Sanitary Act, 1866?—Yes, this is a new provision; it would not be superseded, it would be acted upon along with our Act if a case arose for it.

8170. But it is not incorporated in your Act?—No, not exactly. This is an amendment upon the clause inthe Burial Act, but of course we should have to observe this in a case where it would apply, there is one very like it, though not precisely similar.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Thursday, 5th August 1869.

PRESENT:

THE RIGHT HON. SIR CHARLES BOWYER ADDERLEY, M.P., K.C.M.G., IN THE CHAIR.

THE EARL of ROMNEY.
The Right Hon. RUSSELL GURNEY, M.P., Q.C.
SIR THOMAS WATSON, Bart., M.D., F.R.S.
Lieut.-Colonel EWART, C.B., R.E.
BENJAMIN SHAW, Esq.
HENRY WENTWORTH ACLAND, Esq., M.D., F.R.S.
JOHN LAMBERT, Esq.
FRANCIS THOMAS BIRCHAM, Esq.

(68.) WILLIAM TENNANT GAIRDNER, Esq., M.D., examined.

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8171. (*Chairman.*) You are a professor of medicine in the University of Glasgow, and medical officer of health of Glasgow?—Yes.

8172. How were you appointed?—I was appointed by the board of police at Glasgow, with the concurrence of the Home Secretary.

8173. How long ago?—In the year 1863.

8174. Will you tell us the nature of your office as medical officer of health?—The duties of the office are laid down in the Local Police Act for Glasgow, and they consist in advising the board of police as to all matters bearing on the public health. Powers are therefore conferred to enter houses and workshops and other places in the city of Glasgow, and to report; and powers are given in certain cases of urgency of direct interference, with the concurrence of the board, all power however being supposed to emanate from the board, the medical officer acting merely as an executive officer of the board.

8175. What does that interference amount to?—It amounts practically to this, that I can order in certain cases the disinfection of clothing and of houses, and all other measures that appear urgently necessary. In cases of epidemic disease I can send patients to hospitals with their own concurrence in the majority of cases, and in cases of persons in common lodging houses, or in very extreme cases of danger to public health, without their own concurrence, and in order to enable me and my assistant medical officers to do this, power has been given to the board of police to construct and maintain hospitals for the treatment of epidemic disease, and also public wash-houses for the disinfection of clothing, and to give reasonable support and maintenance in cases of epidemic disease where great destitution exists; this power, however, having been always interpreted rather narrowly, so as to avoid as far as possible encroaching on the domain of the parochial boards.

8176. Do the expenses of your office come out of the same rates as the poor rates?—Not at all; no part of the expense of sanitary proceedings in Glasgow, unless those proceedings are adopted or initiated by the parochial boards, comes out of the poor rates.

8177. Have the parochial boards an entirely separate set of officers, both medical and inspectors?—Perfectly separate; I may explain that in Glasgow there are four parishes, which have each a separate organization, and that the public health organization extends over the whole of those four parishes, and to a certain extent controls the action of them all, but as far as possible avoiding all interference with what may be called the strictly parochial action.

8178. Is there in no case a needless multiplication of officers for the same purpose, as for instance, are the medical officers of the parochial boards never doing the same work as your officers?—So far as voluntary interference is concerned, certainly, and so far as sending patients to hospital with their own consent, certainly, but anything like an authoritative power in Glasgow does not emanate from the parochial board, but from the municipal authority, that is to say, the board of police.

8179. What medical officers have the parochial boards in Glasgow?—The parochial boards have a large number of medical officers for attendance on the sick, and many of those gentlemen exercise great moral influence, and in certain cases they exercise powers which are given them by the parochial board co-operating towards sanitary ends.

8180. Do they communicate with you in case of epidemics or any urgent case of sickness?—They are quite entitled to do so, and I always receive communications from those gentlemen with great attention. As a general rule, however, my knowledge of the fact of epidemic disease is obtained by sending round one of our officers daily to all the parochial boards, and getting from the inspectors of the poor a list of the cases of epidemic disease either taken into hospital or put under private treatment.

8181. Might there not be considerable economy and efficiency in a union of those offices, as far as they relate to medical matters?—I think if the whole of the parochial system of Glasgow were consolidated and put under one board there might be considerable economy and a reduction effected probably; but this is a question which is rather beyond my own knowledge. I do not know the difficulties or the disadvantages which might exist in it.

8182. What other officers and inspectors are there in your department?—There are besides myself five district medical officers, one of them taking the central district of Glasgow, which is by far the most crowded and populous, another the southern district, south of the river, another the eastern, another the northern, and another the western. All of those are officers acting under my direction, and accordingly I am myself more of an administrative officer than an actual visitor of the localities.

8183. Have you an office?—Yes, I have an office.

8184. What inspectors have you?—There is an inspector to each of those medical officers, and in two cases two inspectors to the medical officer. That gives seven inspectors occupied under the district medical officers; and there are in addition one or two office clerks who have the rank of inspector and are entitled to act as inspectors if I wish it, but who do not practically do much except office work.

8185. Have the parochial boards inspectors also?—The parochial boards have inspectors in the Scotch sense of the term, inspectors of the poor, who are the chief administrative officers of the parochial boards for relief, and for all causes, and a general administrator of the parochial system in each board, and they have a number of subordinate or sub-inspectors besides their medical officers. I did not mention before that my district medical officers are in all but one instance also surgical or medical officers of police, and they attend to the casualties and the accidents at the different police offices, but their sanitary work is kept distinct from their police work, and paid by a separate salary.

8186. Are the inspectors in your department in any case officers of police?—Not the sanitary inspectors. They were originally chosen from the officers of police to a considerable extent, and they may be chosen from them now, but I have detached their duties from the police duties as far as possible.

8187. You say that you have power to enter houses and common lodging houses, even without concurrence. Whose business is it to see after the removal of nuisances in Glasgow?—It is the business of every police officer above a certain rank, and indeed you may say of every police officer to a certain extent, and it is also the business of every sanitary inspector.

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The police officers of superior rank are mostly constituted inspectors of nuisances in addition, and given the power of inspectors of nuisances, and all my inspectors are also in that position.

8188. You say that your own powers and the powers of your officers are derived from a local Act which you called the Local Police Act?—The Glasgow Police Act, 1866.

8189. Do you derive any powers from any other Acts or from any general Acts?—We have of course the general powers under the Public Health Act, Scotland, 1867, but I may mention that the Public Health, Scotland, Act, and also the English Public Health Act have been so largely framed in accordance with older Acts, and in particular in accordance with the powers given in the original Glasgow Police Act, that I have hitherto not found it necessary to employ the Public Health, Scotland, Act much, and as there are facilities for working under the local Act which do not exist in so large a measure under the general Act, I prefer to employ the local Act. But of late it has appeared necessary to institute proceedings for the inspection of houses that are not common lodging houses, but where lodgers nevertheless are admitted, houses letting lodgings, family houses, but where one or two lodgers are admitted, and in that case powers exist in the Public Health Act which do not exist in the local Act, and which I am at present endeavouring to enforce.

8190. What is the chief local authority in Glasgow in all sanitary matters?—The lord provost and magistrates, and the board of police.

8191. Do they form what is called the town council in our cities?—The lord provost, the magistrates, and representatives from the different wards form the town council, and the town council elect the board of police annually.

8192. And your department is under them as your supreme authority?—Yes, under the police board, as I said before, but every individual act which I perform is supposed to carry the authority of the board of police, and if the board of police did not bear me out I would fail to have authority.

8193. Under what supreme authority are the parochial boards?—The parochial boards are each of them to a certain extent self centred and independent, but all liable to control by the Board of Supervision of the Poor in Edinburgh.

8194. Is not the Board of Supervision in Edinburgh like the Poor Law Commissioners in London?—Yes, but they are independent of each other. The general idea that I have is that the Board of Supervision controls and interferes with the parochial boards when they do wrong, but as long as they do right it leaves them to work separately and independently. The whole of the Scotch health business, where there is not a local Act as in Glasgow, is placed under the Board of Supervision.

8195. What is the magistrates' committee?—The magistrates' committee is a standing committee of the police board, consisting of the lord provost and the magistrates; and in addition the police board appoint a sanitary committee, which, however, they are not obliged in law to appoint, and which is not a standing committee according to the law. This sanitary committee meets once a fortnight, and I attend its meetings, and in this way a community of opinion is supposed to be kept up between the medical officers and the board. The sanitary committee takes action on my recommendations, and places them before the board, and puts upon its minutes anything to which I object and brings that point before the board, conveys to me the instructions of the board, and in short, forms the medium through which I communicate with the board of police. In ordinary circumstances all sanitary action is managed in this way; but in certain cases of speciality, as when epidemics are very urgent, special powers are given in the local Act which are put in action by giving an advertisement in the public papers upon information by the medical officer; and when those special powers of urgency are given, the administration of those special powers rests not with the sanitary committee, but with the magistrates' committee, and in this case I advise with the magistrates committee about those specialities.

8196. You have told us generally the nature of your duties, will you tell us a little more specifically what is your official treatment of the sick in hospitals?—The board of police has erected a very considerable fever hospital, a hospital of about 140 beds, which has hitherto served us, along with the other hospitals existing, to meet the pressure of febrile disease to a considerable extent. I may mention, however that, before the sanitary organization at present existing, three of the parishes of Glasgow had fever hospitals of their own, and that the Royal Infirmary of Glasgow has also a fever hospital or fever wards attached to it. All this was left unaffected in the first instance by the New Sanitary Act, but when fever rose to a considerable amount, I recommended to the board to build another fever hospital, and after considerable difficulty, because the difficulty of getting a proper site was very considerable, we built the hospital to which I have alluded, which has continued ever since in action, and has been doing a great deal of good. And now, owing to the efficiency of this hospital, and to the indisposition of the city parish, the central parish of Glasgow, to admit fever patients into its own hospital, they prefer to send all their parochial or pauper patients to the hospital of the board of police, which board, however, charges the parish with the cost of treatment of those particular patients which it recommends.

8197. Under whose control is the overcrowding, both of lodging houses and private houses?—Under the control of the board of police, and therefore administered by the sanitary department.

8198. Will you state generally what is the extent of your power in controlling overcrowding?—The powers previous to the Public Health Act of Scotland, 1867, were, in the first place, the regulation of common lodging houses, which was so exactly similar to the English regulation that I need not enlarge upon it; secondly, a power to visit and measure and ticket the doors of all houses consisting of not more than three apartments, and not more than 2,000 cubic feet in all. There are a great many such houses in Scotland, and it is a peculiar feature of Scotch house building that such houses, namely, single apartment houses, or two apartment houses, "room and kitchen houses," as they are called, or in certain cases three apartment houses, form portions of large blocks of building, and on this account require very particular and careful regulation, and are exceedingly liable to become overcrowded; and overcrowding in such houses has a great deal worse effect, as regards the health of the community, than overcrowding in your simpler English houses. Such houses indeed are manufactories of epidemic disease, and generate it to an extent quite unknown in many English towns. The Glasgow Local Act gives powers to regulate the numbers residing in such houses according to the cubic feet of space in the apartments. It is a power extremely difficult to exercise, and which I began to exercise with fear and trembling, and have been only very gradually led on in the execution of it; but it consists essentially in this, that a minimum is adopted in the Act of 300 cubic feet for adults and children above eight, and 150 cubic feet for children below eight years of age. It is within the competency of the medical officers of health to instruct the master of works to enter and to measure all houses falling within the description given above, and to place tickets on the door of each house, indicating the number of cubic feet and the number of persons that may reside in that house; and this ticketing system is then a matter of police, that is to say, the officers of the police (generally officers specially selected for that duty), are then permitted to visit those houses, and to ascertain whether they are kept in accordance with the Act, and if they are not, to bring the occupants up before the sitting magistrates, and in cases of urgency to have

them fined; this is the power. I do not by any means intend to say that this power has been exercised to the full, in fact it is so arbitrary that it cannot be exercised to the full, and especially in a place like Glasgow, where overcrowding has been a chronic growth of generation after generation, where the habits of the people have become accommodated to it and vitiated by it for generation after generation, and where the very idea of a different mode of living has to be initiated in many cases, and where moreover the house accommodation within the possibilities of living of that class, is very limited. In such a place I believe that the carrying out fully of an Act like this is altogether impossible, but the magistrates have the power, and within certain limits they do exercise the power.

8199. Do the authorities prevent new buildings being made upon this old plan?—They have power to do so, and they ought to do so; and I have so much confidence in the master of works, who is an extremely judicious and able officer, that I believe that the new buildings are to a great extent more in accordance with the public health than the old ones; but I think it necessary to explain that my advice is not officially taken about new buildings at all, unless under very exceptional circumstances.

8200. Are the regulations about the number of cubic feet of air, and other such regulations, matters of byelaws?—In point of cubic space there is no byelaw, because it is laid down in the Act.

8201. But they have the general power of byelaws?—They have the power of making byelaws for cleanliness and other desirable things in the case of common lodging-houses in the local Act, and they have power additional in the Public Health Act to regulate, as respects the cleanliness of all houses where lodgers are admitted.

8202. Are the labouring class in Glasgow necessarily crowded from the want of space for building?—Yes, they are to a very great extent, and never more so than at present.

8203. Do you think that this has a very deleterious effect, both physically and morally, upon the population?—Extremely deleterious in both ways.

8204. Does it create special diseases?—It creates special diseases, and it demoralizes the population; and in the course of generations it completely overthrows the physique of the population. It is impossible to walk through the central streets of Glasgow without observing that you are in contact with a population awfully degraded both in its moral and its physical attributes; a population whose mere external characteristics impress you at once with the idea of a depth of degradation which you can hardly witness almost in many other places.

8205. Does that lead to a general want of cleanliness?—Yes, a general want of cleanliness.

8206. Are those crowded houses tolerably supplied with water?—They are not ill supplied with water now. We had a great deal of trouble to get them well supplied, because, from the great height of some of the houses, and the great want of space, it was difficult to get the water up. I may mention that I have discountenanced the admission of water as a general rule to the interior of houses of a single apartment, and even houses of two apartments, because the slop that is made by having the water in those houses, and the risk of contamination by the leakage upwards of gases from the drains is a source of danger. That is a sufficient objection, I think, to the admission of the water to those apartments; but our general rule in those large tenement houses is to admit the water to every second floor on the stair head, and to have a sink there and a water tap; and the rule which I issued and tried to enforce, as far as I possibly could get it done, was that in no tenement in Glasgow should there be two stories without water, and in no instance should there be less than one water tap to ten families. Even that was difficult to carry out in some houses, because of the want of space, the darkness at the landings, and the total absence of any place where water could be got and used with facility.

8207. Do you think that the operations of your medical department have already succeeded in partially remedying those defects?—I think that it has very largely operated well in the case of the water. But for the promptings in fact of the sanitary department the supply of water to Glasgow would have been extremely deficient, even although the water is there in abundance; but in that respect, and in regard to certain measures of cleansing, and in regard to disinfecting and washing of clothes, the fumigating apartments, and general measures in the case of epidemic disease, and in regard also to the whole proceedings in connexion with the treatment of the sick in hospital, I believe that the sanitary department has done a great deal of good; but we constantly feel, nevertheless, that the evil is to a great extent beyond our control, in consequence of the bad house accommodation, and the bad habits growing for generations which are the consequence of that bad house accommodation.

8208. Can you tell us if there is any similar department to yours in other large towns in Scotland?—There are health officers in Edinburgh, in Dundee, in Aberdeen, and possibly in other considerable towns in Scotland, but I do not think that there is in any town in Scotland so considerable a health establishment as in Glasgow; and I do not think that there is any local Act so pointedly directed to sanitary matters as in the case of the Glasgow Police Act.

8209. Are there any medical officers at all in other parts of Scotland besides those large towns?—Wherever there is no local Act it is presumed that the public health is looked to by the parochial board, and the parochial board has full powers, under the Public Health (Scotland) Act, 1867, to do almost everything which can be done either in England or Scotland, by local Acts or otherwise.

8210. Their medical officers have merely to attend the poor. Are there any other medical officers in Scotland to report upon the sanitary state of the country?—There is nothing to hinder any parochial board from appointing special health officers; but I do not know to what extent they have done so.

8211. Are the medical officers whom they employ generally over Scotland men of sufficiently high qualifications to be looked to to make reports generally upon the sanitary state of the country?—As far as I know the health officers actually appointed in the large towns are men of the highest possible qualifications.

8212. Can you tell us whether they generally have inspectors of nuisances appointed by the parochial boards all over the kingdom?—I will not say all over the kingdom; I am not sufficiently informed. I believe there are very few considerable parishes where nothing has been done, but I am assured that in many parishes very little has been done.

8213. Could you offer to the Commission any suggestions as to the possible improvement of your own department, or do you think it is so well constituted nothing more is wanted?—I think anything that would strike at the root of the evil in Glasgow must be a measure of far larger scope than any that we have at present; but we have got powers in Glasgow under the City Improvement Act which I hope will do us a great deal of good in time. The commissioners, however, under that Act, who are entitled to buy up very largely property in the waste parts of the town, and to reconstruct that property, or to resell it with conditions as to the constructions that are to be put upon it, have hitherto only seen their way to buy up property; they have gone very little, if at all, in the direction of reconstruction. This is for reasons connected with the commercial value of the property, into which I do not feel myself competent to enter; but in the mean time a great deal of destruction has been going on in Glasgow in consequence of the operations of the City Union Railroad and other causes, and there has been no corresponding amount of reconstruction; and

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especially, although there has been a great deal of rebuilding towards the suburbs, there has been no reconstruction of houses suitable for those who have been displaced; and accordingly, as I said before, I believe that Glasgow never was so overcrowded in its central district as it is at this moment.

8214. (*Sir Thomas Watson.*) As you have spoken of the manufactories of disease, what diseases are they which are so manufactured by this overcrowding?—Chiefly typhus fever. Typhus fever I should call the great epidemic of Glasgow, and the most instructive epidemic, because I hold it to be an epidemic which, with proper house accommodation, ought to be most completely under control.

8215. Do you think that crowding such as you have described, and dirt and poverty, ever engender typhus fever without any previous existence of the germs of that fever lurking amongst the population?—You are aware that that is a question of extremely remote theory, and I do not profess to have a positive opinion upon it. My feeling is that typhus fever generally originates from a specific germ.

8216. How do you ascertain when any epidemic begins in Glasgow, cholera for instance, of which you have had a good deal in Glasgow?—We had a great deal of cholera in the first three epidemics, but wonderfully little the last time.

8217. It is always brought to Glasgow, is it not?—In a few instances we could trace it as being brought from Liverpool.

8218. Supposing it were brought now, should you have early information of its presence from your position there?—I believe that I have earlier information than most other people, but of course in a vast and crowded community like Glasgow, which you may take at half a million, densely crowded in great blocks of buildings upon a very small quantity of ground, it is quite possible for cases of disease to be smuggled into Glasgow, and even to spread for a considerable distance without information getting out.

8219. Then there is no system of inspection which would ensure your speedy knowledge of the presence of cholera?—There is, as I have mentioned, a system of daily calling. We send daily round to all the hospitals and to all the parochial boards to possess ourselves of all the information that they have; and we presume that sick persons will send for medical attendance, and that in that way we shall get informed as to the cases of disease; but any cases of disease where no information is given, and where they do not send there, but send to the private medical officers not in communication with the authorities, may very easily escape our attention, and do so.

8220. And do you exercise the power, when such information reaches you, of immediately proceeding to extinguish it, and where possible to stamp it out as it is now called?—We have done so in some cases, but the difficulties of doing so are enormous. In the first place, very often the patients refuse to submit, and the getting of them to submit under a legal order is a matter of great doubt, both as to expediency and practicability. In the second place, the disease is often spread before we get a knowledge of it, that is to say, it has often implanted itself beyond the first member attacked; the germs are there, and they are spread over the population; and beyond sending the patients actually ill to the hospital, we can do little more than watch the locality; we do, however, watch the locality, and whenever new cases crop up we send them also to hospital; but notwithstanding all that, in those crowded tenements a case of disease will often infect the neighbourhood, and I have known as many as 16 or 20 or 25 cases of fever spread from one case, that one case having lain in a squalid apartment throughout the greater part of the fever unknown to any medical man or to any health officer.

8221. Then again, supposing that you discover the presence of disease, and you have the means of immediately removing the diseased person or persons, what are the modes of disinfection which you employ and how are they enforced?—We have under the authority of the board built a hospital in which there exist all the means for disinfecting clothing. Besides that we have built a wash-house specially for the disinfecting of the clothing of persons with infectious disease; and whenever an infected house is known to us we make a point of persuading the people to send all their clothing and all infected articles to this place. We have them properly labelled and sent to this washing house, and disinfected and sent back; and we make ourselves responsible for all of them. In cases where the clothing is too tattered for us to wash, or if it is absolutely gone, we would not hesitate to supply new clothing; but in most cases we just wash it as well as we can, and restore it in the best state we can. We also furnish them with clean straw for the beds, and we send men down to the house to fumigate the walls and to wash all the articles of furniture, and make the rooms as clean as possible; and then we throw open the windows and let them remain for 24 or 48 hours unoccupied. But all this implies of course that the family shall have evacuated the house, and that we can only manage when the whole family is down with the disease at once, or when we can stretch a point and just take off the whole family to the hospital in a body.

8222. So that if the disease fastened itself upon a certain portion of the community it would be very difficult to extinguish it before it spread to some other portion?—Extremely difficult. I hold the stamping out of an epidemic disease in such a population as Glasgow, to be easy to conceive of in theory, but practically impossible to accomplish.

8223. When you speak of the supply of water to two-storied houses, how is it supplied, by stand pipes, or in cisterns, or in what way?—Among the poor it is generally by direct supply, because the greater number of the taps which have been made at the stair heads in Glasgow have been recent affairs, and in those we always have the water direct from the main, but in the houses of the respectable classes in Glasgow there are still a great many cisterns, and the old style of managing the thing. Although I discountenance cisterns, I do not feel that I have authority to compel people to exchange them for the direct method, and therefore there are still a great many cisterns existing in that class of houses.

8224. What becomes of the sewage of Glasgow?—The sewage of Glasgow is at present thrown into the Clyde, and is a very great nuisance.

8225. Is its polluting presence manifest in the Clyde?—Very manifest indeed. It is so manifest that I have to a great extent given it up as a health question. I believe it is a stink question, and it will solve itself as a stink question. I do not require to go to it in a health point of view at all.

8226. You have not much evidence in Glasgow, I believe, of disease propagated by the drinking water?—I think not. Certainly not now.

8227. Where does the water come from?—From Loch Katrine. The drinking water of Glasgow is exceptionally pure and good, and I must say that I think that we owe it to a great extent to the purity of the drinking water, and perhaps also to the very active sanitary measures that were adopted at the time, that the cholera in 1866 did not spread in Glasgow to more than a very limited extent.

8228. What becomes of the excreta of the inhabitants of those low lodgings and places that you have been describing?—For the most part it is simply collected and removed. It is thrown out into ashpits, and collected and removed, and of late I have quickened very much the action of the cleansing authorities as regards this process of removal, insomuch that in ashpits where the removals were very often not more than once in three or six weeks I have in the centre of the town insisted upon daily removal, or at the most removal every second or third day. So that what used to be a matter of constant complaint, namely, an overfull ashpit, I have endeavoured to reduce as much as possible to be a matter of rare occurrence; and I have also, in very

many instances, indeed I may say in thousands of instances, directed the reconstruction of the ashpits, so as to limit the size of them very much and to make the removal much more frequent and absolutely necessary.

8229. What becomes of the soil when it is removed?—There is a regular commerce established in it. It is carried away by railway trucks long distances into the country, and markets for the sale of this manure have been opened up in the agricultural districts to an immense extent.

8230. (*Dr. Acland.*) You have the personal inspection of the greater part of the city of Glasgow, have you not?—In a general way, but in a great number of instances I act through my district officers. I trust their reports and act upon them directly.

8231. Do you find that the number of inspectors that you have is sufficient to keep you informed of the general condition of this great population of half a million?—I think it will be necessary to extend the number very considerably, especially with reference to this visitation of houses let in lodgings as opposed to common lodging houses, which we are only beginning. That visitation requires an additional number of inspectors, and I have no doubt that the sanitary work of Glasgow would require a larger number of inspectors than we have at present, but we have been advancing gradually and cautiously, and trying not to alarm, if possible, the sense of the community with the idea of extravagance.

8232. I understand that the medical officers under the Poor Law Board are only indirectly connected with you?—They are not legally connected with me at all. The general distribution of the work is that the poor law medical officers are understood to treat the sick upon an order issued by the inspector for the treatment of that individual case at once, but in Glasgow they are not understood to act, unless voluntarily, as sanitary officers. They do, however, very considerably act as sanitary officers and aid us in that way.

8233. You may say that the poor law officers treat the poor, and I could well understand that it would be well to leave that function solely to them, supposing that you had such a staff of officers as you have. Is that so, or would you unite the two bodies of sanitary inspectors and practitioners among the poor?—I think if we had a united parish in Glasgow we could unite the functionaries of the parish to a much greater extent than at present exists; but with four parishes, each having a separate and independent head, as it were, and a separate and independent action, it would be extremely difficult just now to get a uniform sanitary system common to the four parishes.

8234. That is only a question of local administration, it does not affect the principle?—No, not at all. I see no objection, but the contrary, to the medical officer of the Poor Law Board acting as a sanitary officer.

8235. To illustrate what I mean I will take an example with which you are well acquainted. I believe our common master, Professor Alison, was probably as well acquainted with the habits of the poor of Edinburgh as any person could be, and I imagine that this one man's information, supposing there had been a powerful sanitary inspector in Edinburgh, by communicating the facts of disease and dirt and misery, might have quickly alleviated a great part of it. Is not that so?—Certainly.

8236. He would not have been employed as executive, but would merely have notified that certain things were necessary in certain places?—There is no doubt at all about it, and there is no doubt at all that the more the parish medical officers who are attending the sick can be intrusted with sanitary work the better for the public.

8237. It seems that if that were the case there might be a very efficient inspection and administration through the agency of the poor law medical officers without any great or extensive machinery, and it might be efficient without being costly. Supposing, for instance, that it were part of the duty of the poor law medical officers to inform you of any nuisances with which they are acquainted affecting the public health, you would have the machinery and would be able to attend to all their wants at once?—Certainly.

8238. That would not impose onerous duties upon the poor law officers?—Certainly not, but still I think those duties ought to be distinctly recognized and distinctly paid for.

8239. That also is a question of arrangement?—Yes.

8240. I understand you to say that your chief mode of knowing of the foci of disease is through systematic enquiry at the public institutions?—Through the public institutions and the inspectors of the poor, who order all the medical relief.

8241. Are not those the same as the relieving officers in England?—Yes.

8242. Do you know the system of poor law administration in Paris?—No, not intimately. You are well aware, however, that there is a great deal of difference of opinion at present as to the poor law administration in Scotland, and that there is a committee of the House of Commons engaged in investigating that subject.

8243. Are the hospitals which you have under your control, under the police committee, used exclusively for the very poor, or may others go to them?—Rather the contrary. The pauper class are supposed to be provided for by the parishes, and as I said before each parish in Glasgow with one exception, which is the poor small parish of Gorbals, has a fever hospital of its own. The hospital that was erected by the magistrates was supposed primarily to serve for the cases where the persons were not paupers, but where, nevertheless, danger arose to the public from their being treated in their own homes, and it is only since the city parish has employed our hospital that it has come to be a pauper hospital to any considerable extent.

8244. Do I understand you rightly that you think it desirable that persons above the pauper class should be able to frequent hospitals?—Certainly, in the case of epidemic disease, and in the case of a large town like Glasgow.

8245. How would you propose that the treatment should be paid for in that case?—We have power to impose a rate, and that is included in the sanitary assessment.

8246. Supposing that a merchant, a wealthy man, had scarlet fever, would you take him into one of your hospitals if he wished?—Not as a rule certainly, because in such cases there are generally the means of separation in their own houses; and moreover the feelings of the people induce them to avoid sending such people to the hospital. But I have taken patients with the scarlet fever and patients with small-pox from wealthy houses into the city hospital, chiefly servants and nurses, and we have always intimated in that case that we expected the party to contribute the same sum as the parochial boards pay for their cost, and a sum equivalent to the expenses of the treatment.

8247. Have you not large commercial establishments where they employ a good many resident assistants, so that if any epidemic arose among them it would be sure to spread to many?—In such cases the patients are usually sent to the Royal Infirmary, which has also fever wards, and where subscribers to the infirmary are supposed to have paid one, or two, or three guineas, according to circumstances, and to have the power of recommendation in accordance with their subscriptions.

8248. You mentioned that you noticed a great deterioration, as you believe from sanitary causes, in the population of Glasgow. Could you give the Commission any facts bearing on that grave question in addition to what you have stated?—I am a new man in Glasgow comparatively. I have only been in Glasgow since 1862, and I cannot speak from personal knowledge upon that point, but I believe that the experience of very old Glasgow physicians points to a very great deterioration in the quality of

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the population during the last 30 years. Some ascribe it to the great immigration of Irish, others ascribe it to the development of intemperance, and others ascribe it to the habits of the Roman Catholics; but I myself think that all this is subordinate to the great question of house accommodation; that the house accommodation has deteriorated and the habits of the population have deteriorated with it and in consequence of it.

8249. How does the physical deterioration show itself? Do you mean by stunted growth or stunted intelligence?—I think I can answer that question if you will permit me to show you the plans of one house which is a type (*the witness produced a plan and explained it to the Commission*). I wish this to be considered as simply an aggravated type of the kind of deterioration which has been going on in Glasgow to an immense extent.

8250. My question related to deterioration in the type of individuals, and not in the type of houses?—I think that the houses are the cause of it. I am coming to that afterwards. This is a block of buildings built upon one side of a court, which as you see has access from a broad street called Argyle Street, an access through a covered entry, but with a very considerable open space in the centre. Excepting that that space is too much blocked up by the high buildings on each side, I think the general plan of houses surrounding an open space is a good one. Here, however, this particular block is six stories high. It is entered at the bottom only by one door, and it has access only by one staircase to the whole of it. A part of it on the ground floor is occupied by a school which diminishes the number of single apartments or tenement houses in it to a certain extent. But the whole of the rest was originally built for houses of about three apartments, and not less than two apartments in any case. It was originally built with a view to that, and even for that scale of living it was of a very bad construction, as I shall show you presently. But secondly, in consequence of the multiplication of the lower class of the population, it was found profitable to alter the original arrangements so as to divide the whole of the large tenement into houses of single apartments with very few exceptions. Turning to the next plan you will see what those houses were originally.

8251. (*Lieut.-Col. Ewart.*) Is the house blocked up on all sides?—Yes.

8252. Are the landings communicating with the staircases internal?—Yes, here is the second story (*producing another plan*). It is substantially the plan of all the stories except the ground floor. On the ground floor is the single means of communicating with the central stair, which is of very limited area. The stair mounts up the whole six stories, and on the top there is a glass roof which is the whole ventilation of that stair for six stories, and there is no light and no air gets in by any window to this stair. Originally you will observe what constituted the house here (*pointing to the plan*). There would probably be only four houses on one landing, but now there are 12 houses on this landing. Each house is a single apartment, and the access to those apartments is obtained by two covered ways or tunnels reaching from the central staircase back into the building, and having no communication whatever directly with the external air or with the light, so that the whole of the passages leading to those 12 houses, and the whole of the passages of the same kind for all the six stories are almost totally destitute of air and light. And within this house there were I cannot tell exactly how many families, but probably 60 or 70 families, with no light at all except what comes from the roof six stories high down the stair, or what may be smuggled in when the doors of the apartments are open.

8253. Have they gas?—Yes, they have gas on each landing at night, at least it is in the power of the police to compel it. The houses vary from about 700 cubic feet to about 1,200 cubic feet, and there are one or two houses of two apartments that exceed that. This building is the type of a great many, but it is so aggravated a type that, after having found the total deficiency for some years of ordinary sanitary arrangements, that is to say, the arrangements which Sir Thomas Watson alluded to, we endeavoured to stamp out the fever by fumigating and so on; but after having found that epidemic disease recurred and recurred in this house I lately attacked it by way of getting an order to compel reconstruction, and my original plan was the complete removal of the stair, which would have involved the total reconstruction of the tenement. However, that was considered to be rather too radical, and the proprietor himself submitted a plan of minor reconstruction, by admitting some degree of light to the stair on each story, and putting in shafts as ventilators at each end of the building. I did not think that that was so good as the plan which was submitted by the master of works, but still it was good to a certain extent, and that has been adopted and is now going on.

8254. (*Chairman.*) Would that be an order from the police board or from the provost?—By the police board. But for this one case of aggravated evil, where there has been after some years this degree of interference, you must count hundreds, and possibly thousands, of cases of houses radically upon the same bad plan, but not quite so bad in degree, or in multiplication of tenancies, where epidemic disease is constantly in danger of being generated, and where, nevertheless, the evil is not so clear that we could carry public opinion with us to get it summarily put down by reconstruction, because you observe we establish precedents, and if I reconstruct one building I may just proceed to reconstruct a third of the town of Glasgow. I do not hesitate to say that a very large proportion of the town has been constructed upon bad models.

8255. (*Dr. Acland.*) We will revert to the previous question, which I would amplify in this way. We are breeding up in places not quite so bad as yours, but in the bad places of our large towns in England, a population under the worst local influences. Can you tell us what kind of children are born and brought up in these circumstances, and what is the prospect in a quarter of a century's time of the physique of these thousands and hundreds of thousands who are being so brought up in this country? Have you noticed as a physiologist and physician anything precise which you can communicate as to their physical condition?—In the first place the children are almost invariably squalid and dirty, and very often exceedingly flabby in their flesh, and very anemic and often stunted in their development altogether, and certainly very bad types of humanity in many cases. But it is not always so. You see healthy rosy children even in those bad places, and the only explanation that can be given of that is that they live so much out of doors; but then a Glasgow child in the centre of the town has nothing on earth to do out of doors except to paddle in the gutters. In almost no instance has it any playground except the public street, and it meets there with the children of dozens of other similar families, coming down long stairs and through long alleys and pouring out into the public street to play there in the dirty gutters amid all sorts of moral and physical dirt. Those children are brought up under those influences, and when they grow to be young men and women they are in addition subject to all the causes of demoralization which arise from the constant association of young people of the two sexes under circumstances like these; ill-fed, barely clad, in the presence of oaths and unseemly language, and often very obscene language, with no power whatever almost of keeping themselves out of the crowd, and with all sorts of temptations and allurements to drink and to dissipation of every kind. I hold therefore, that drink and dissipation are in Glasgow, like physical degradation, to a great extent the product of the bad system of house accommodation. In short, I may be riding a hobby too far, but if I were to pitch upon one thing that is the cause of the epidemic disease and physical and moral degradation in that population, I should say it was the system of

house construction such as we have had for the last three or four generations in Glasgow.

8256. What is the privy accommodation in those courts and houses?—The privy accommodation is generally outside the houses, and I do not encourage its being taken into the inside, because I think that probably greater evils would arise from waterclosets in those dark filthy passages than from the outside accommodation.

8257. How many privies would there be for those 70 to 80 families?—In that respect we are very much limited by room. We have in general terms power under the Act to compel adequate privy accommodation. There is no definition given of what adequate privy accommodation is, but in a very great number of instances from the close system of the building we have found it impossible to secure adequate privy accommodation, and we have been obliged to content ourselves with such privy accommodation as ground space could be had for.

8258. Then in some cases, if I understand you, you would require power to clear away those places?—Certainly.

8259. Have you such powers under any Act?—We have it under the City Improvement Act with respect to the places specially scheduled in that Act, but I do not think we have any general power apart from that.

8260. But have you power in the case of so grievous a nuisance as that which you have described to us just now to remove the building and to replace it by proper accommodation?—Yes.

8261. (*Mr. R. Gurney.*) Have the Town Improvement Commissioners power themselves to purchase and rebuild, or would they have any power to compel the owners to reconstruct where it is dangerous to health?—The case of Binnies Court to which I have alluded may be an instance. Binnies Court was not scheduled in the City Improvement Act, and we had not therefore the power of buying it up which is given to the corporation with regard to other property, and when I attacked Binnies Court I did so simply by the general powers of the law, the same powers that I believe exist in England and everywhere else under the Public Health Act. I attacked it by simply intimating that from experience I considered it was not fit for human habitation in its present state; the proprietor immediately put in a letter contradicting me, and stating that he denied my asseveration, that it was not fit for human habitation, and had he chosen to stand upon his rights it would have become a question to be decided by the sheriff (*i.e.* the judge of the county or of the city) whether he or I was right, and legal evidence would have been taken and witnesses would have been examined upon this point, and very likely I should have carried the day; but it would have been a rather roundabout process, and therefore I was ready to compromise the matter by acceding to his plan in preference to our own plan, as he promised to reconstruct it in accordance with that plan.

8262. (*Dr. Acland.*) Supposing any such dwellings are removed, are you in any way bound to provide a similar amount of accommodation elsewhere, because it is clear that there is far too great a population upon a given area, and if you destroy even this accommodation where is the population to go to?—In this case we shall only make a certain internal improvement that will not displace the population, except very temporarily and gradually, but as regards the general question I do not hold that there is any such power given in Glasgow, except under the City Improvement Act, which is a special and local Act, and that power secures that not more than 250 families shall be displaced by the City Improvement Act without a corresponding amount of accommodation being afforded or without the sheriff being satisfied that there exists accommodation for those people.

8263. With your great experience of administering a large population of this kind, do you consider that we might look to your arrangements as typical and sufficient for the administration of a great sanitary district, or do you find that really there are wants which, as a reasonable man, you think the law could supply?—I confess I think that in Scotch towns at least the law must sooner or later provide us with much larger powers of recommending and enforcing the destruction and reconstruction of buildings; but I think those powers would require to be guarded, because they are in their very nature to a certain extent confiscatory, and press upon the purses of the owners of property. They would require, therefore, to be strictly guarded, but I think they would require to be had before any considerable sanitary improvement can be made in such places as Glasgow. There is another power which I have often coveted, but my lawyer friends look with suspicion upon this too: I think when epidemic disease is in a building it ought to be within the power of a public health officer to prevent the importation of new blood into that building. I do not think it would do to disperse the population of that building, because it would simply carry the germs of epidemic disease elsewhere, but I think it would be right to prevent new occupation within that building until it was certified that the epidemic disease was gone from it altogether. In the case of typhus fever it is a common thing in Glasgow to see one case introduced and 20 or 25 cases follow; in fact, the parochial surgeons will tell you that when fever once gets into a building like Binnies Court, or like many others in Glasgow, it does not leave it until it has regularly gone through every family, and therefore I should be inclined to have the power, if possible, to insist that when epidemic disease is shown to be spreading in this way the proprietor shall not let a room in that tenement anew until the epidemic disease has been expelled from it. If we had such a power as this I think we should enlist the pecuniary interests of the proprietors of such buildings on the side of sanitary reform to a much greater extent than is the case at present.

8264. Have you any reason to think that the expence of your sanitary administration, which of course is costly, would be repaid by the diminution of the payments for disease, and the maintenance of the sick, who must exist in a frightful condition, and must be paid for out of the rates?—That is only if you give the power of striking at the root of the evil. It is a very difficult question to answer. I think that the sanitary administration just now only scratches the surface; we do not get at the bottom of this evil, and shall never get at the bottom of the evil till those houses are reconstructed. I think that as a commercial operation it would pay in the end. I have not a doubt of it.

8265. (*Chairman.*) Are the rates levied in Glasgow now for town administration heavy?—Yes, the rates are pretty heavy, but not nearly so heavy as in many other places I think. The sanitary rate amounts to about 1*d.* in the pound now; for a few years it was 2*d.* in the pound, but that was when the sanitary arrangements were increased by the large expenses connected with the getting up and the administering of this hospital in the first instance.

8266. Can you tell us what the poor rate amounts to?—I will put in an official statement as to the whole of the paroachial and municipal taxation of Glasgow, which will explain it better than I can do from memory.

Of *Poor Rates*, there were collected in the four parishes in Glasgow in 1868:—

	£	s.	d.
City parish, at 1*s.* 7*d.* per pound	45,511	0	0
Barony parish, at 7 per cent.	49,676	17	8
Govan parish, at 4½ per cent.	21,256	9	10
Gorbals parish, at 3*s.* 6*d.* per pound	2,877	5	7
	£119,321	13	1

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Besides the above, the taxes collected for police purposes, &c. were:—

	£	s.	d.
For Police, at 1*s.* per pound for houses rented above 10*l.* - - - And at 7*d.* do. do. under 10*l.*	92,004	12	1
For Sanitary Department, at 1*d.* per pound for houses rented above 10*l.* - - - And at 0½*d.* do. do. under 10*l.*	6,588	13	9
For Statute Labour, at 4*d.* per pound -	28,913	6	3
	£127,506	12	1
For the City Improvement Scheme, at 4*d.* per pound, about - - -	28,000	0	0
Other taxes for Parks, Prison, House of Refuge, amounting in the whole to 5¾*d.* per pound, about - - -	40,000	0	0
About - -	£68,000	0	0

For poor rates, each parish only levies the assessment on rental within their own jurisdiction; while for police purposes, &c., the assessment is levied on the rental in all the parishes. A small portion of the assessment in Barony may be levied from rental in the *landward, i.e.*, extra-urban part of the parish beyond the present municipal boundary; but the amount cannot be very great. The same remark will also hold good to perhaps a greater extent in regard to Govan, but not so with regard to either the City or Gorbals parishes, which are wholly within the municipality.

8267. (*Dr. Acland.*) Are the artizan class oppressed by these rates?—Not so much perhaps as in England, because rates are not levied in Scotland below 4*l.* rental.

8268. (*Mr. Russell Gurney.*) Does that penny in the pound sanitary rate include the hospital?—Yes, now that the hospital is built it includes everything. We pay all expenses now out of the penny in the pound rate. 1*d.* in the pound in Glasgow means about 6,000*l.* a year.

8269. (*Sir Thomas Watson.*) Can you tell us the death rate of Glasgow?—The death rate of Glasgow has lately been the highest in the kingdom. For a while we were below Liverpool, and often below Manchester; but of late it has been certainly very specially high, particularly in March of this year, when we had a tide of mortality from which we have not yet recovered. I made a special report upon the subject of this high rate, which, if the Commission will allow me, I will put in (*delivering in the same*). It has usually been from 29 to 32 or 33 per thousand; but the weekly death-rates which the Registrar General has been lately giving us posts it up much higher at some times and lower at others. I have known it as high as 45 or 46 in the thousand.

8270. (*Dr. Acland.*) The duties of sanitary inspectors might be summed up under the head of engineering, chemical, medical, statistical, and forensic; could you state what duties you would wish to see assigned to the most highly skilled officers of that class?—For myself, being the medical officer of a very large community, any multiplication of the duties would be extremely oppressive and extremely complicated and difficult, and I am rather anxious to confine the sphere of the medical officer's duties, than to extend them too much. I think if he becomes an analyst and an engineer, and a general scientific man acting upon his own information as it were, he would run great danger of going wrong, and becoming a jack of all trades and master of none, and therefore I should be very much disposed in a large community to let the sanitary officer watch chiefly over the development of epidemics, and over the more obvious things that he can recognize as bearing upon the public health, and to remit delicate and minute analytical questions, questions of engineering, and chemical science, and the adulteration of food and the application of the microscope, to special officers, who should be consulted as experts in those particular cases.

8271. Would you not have some defined organization for ensuring the discharge of such functions in connexion with any chief Sanitary Office?—I think that the sanitary officer should be generally charged with everything that bears upon the public health.

8272. With power to take advice from experts if he wants it?—Yes, with power to take advice.

8273. (*Mr. Lambert.*) You say that property under 4*l.* rent is excused from rate in Scotland generally; is that the case with regard to the sanitary rate as well as other rates?—I think so.

8274. With respect to those houses which you have described, are any rates paid for those houses by individual occupiers?—I rather think yes in some of them. Many of them would be above 4*l.* rent.

8275. And all above 4*l.* rent would contribute towards the sanitary rate?—Yes.

8276. Have they the power of deducting any portion of that rate from the owner as in the case of the poor rate?—They have the power to appeal against it upon the ground of poverty, but I do not know that they have any power of graduating the rate more than that. I believe that there is in the Glasgow Police Act a special rate and a half rate upon rents below a certain amount, but I forget what the details are.

8277. You are aware that in the case of the poor rate in Scotland the occupier who pays it has the right of deducting one half from the landlord?—Yes, that right exists.

8278. Does it exist with regard to the sanitary rate, do you know?—I think the sanitary rate is paid by the occupier.

8279. Do you know whether the sanitary rate is paid upon the rental as stated in the valuation roll, or is it paid upon the rental after certain deductions are made from it?—I think it is on the rental, as stated in the valuation roll, but I am afraid I am not a good authority upon this point. The sanitary rate is included in the police rate, but it is included under a separate head as a sanitary rate.

8280. Can you state what expenses are paid out of the sanitary rate?—The whole of the expenses connected with the fumigation and disinfection, and the whole of the expenses connected with hospital treatment, and the treatment at home when that is ordered by the magistrates committee exceptionally, the special expenses connected with cleansing in cases where orders are given for the cleansing of closes and passages where they appear to be in a filthy state and dangerous to the public health, and when we do not think it proper to wait for the roundabout process of calling upon the people to cleanse them themselves.

8281. It is separately collected, is it not?—It is collected in a lump sum under the name of police rates, but charged separately.

8282. Is the 1*d.* rate in the pound a sanitary rate alone, or does it include the police rate?—The sanitary rate alone is 1*d.* in the pound.

8283. Is there any restriction with regard to the amount of the sanitary rate?—There is a restriction, but it is far beyond 1*d.*; in fact the sanitary rate was until last year made to pay for some things that I think it ought not to have been made to pay for, because it was considered a more elastic rate to fall back upon.

8284. Is any property wholly or partially exempted from the sanitary rate independently of property under 4*l.* rental?—I think not.

8285. Gardens for instance, or land of that description?—It is only upon houses, and I think upon warehouses and also shops, not upon land.

8286. In the case of epidemics, have you any power to provide medicines for the people?—An exceptional power.

8287. Will you state what the nature of that power is?—The power is, that if I am satisfied personally that the case is one where the interest of the patient will be neglected, and where the public will receive damage owing to the patient not being clearly a pauper, and owing to his nevertheless not being in a state to give himself the necessary means of cure, I can then

order in the name of the magistrates' committee that he shall receive medical attendance and support.

8288. How is this paid for?—It is paid for out of the sanitary rate, but it is a very exceptional thing, because under ordinary circumstances any poor person who is disabled by disease may be attended at the cost of the parochial board. But, curiously enough, a difficulty sometimes arises in Scotland. If the head of the family is seized first, then there is no difficulty at all, the parochial board will always take up the case without a moment's hesitation; but by a recent judicial decision there is a difficulty in taking up the case of a sick child, and therefore where disease affects the children first in a family, we are often not able to throw them on the parochial board, in consequence of the head of the family being at work, and able-bodied.

8289. My question with regard to the supply of medicines had not reference so much to individual families as to supplying preventive medicines in the case of cholera, for instance, to any persons who choose to apply for them?—In the case of cholera it was so exceptional a case, and so alarming a disease, and a disease where rapid and instant control, both in the way of prevention and cure, seemed to me of such paramount importance, that I proposed to the parochial boards to take over the whole of their medical functions, and to charge it upon the ordinary sanitary administration. I recommended the police board to build two additional hospitals, and to be prepared to build three or four more in different parts of the town if cholera extended itself; and those two hospitals, in addition to the ordinary fever hospital, were built. I made this arrangement with the parochial board, that in order to free our hands for cholera they should take into their hospitals the whole of the fevers occurring during the visitation of cholera, that I might be able to keep our ordinary hospital, and the additional hospitals, free for cholera cases. I made an arrangement by which the whole of the administration of those hospitals would be from one centre, but we should nevertheless obtain the advantage of the various hospitals; and we made arrangements with medical men to treat cholera cases out of doors, and also with a number of inspectors to go about visiting and to exercise premonitory regulations. In fact, we had a most complete, and I believe it would have proved a very efficient, organization in existence to meet any epidemic of cholera that occurred, but the epidemic was so small that we never built more than two temporary hospitals.

8290. But are you empowered under the Act which is in force in Glasgow to provide medicine for contingencies of that kind?—We have power if I declare that an exceptional epidemic necessity arises.

8291. Could you provide them and pay for them out of a separate rate?—Yes; but that is discretionary.

8292. (*Lieut.-Col. Ewart.*) Is the water supply which you have spoken of which you have recently obtained, a constant supply during 24 hours, or is it intermittent?—A constant supply. There are one or two places in Glasgow too high to get water freely during the day, but very few; with that exception the supply may be said to be constant and abundant.

8293. Will it rise to the landings of those houses that you have spoken of five or six stories high?—All except those one or two spots that I have alluded to, where the upper stories of the very highest placed houses in the town, houses more than 200 feet above the sea level, do not receive an abundant supply during the day, but they would get it abundantly during the night.

8294. I believe you have had some plans under consideration for employing the sewage of the town which you have spoken of as running into the Clyde, and being a great nuisance?—Yes; there have been various plans proposed, and there is at present a committee of the board of police sitting with reference to it.

8295. What has been the difficulty in carrying out any system of the employment of this sewage?—The difficulty is very evident and very difficult to get over certainly. In Glasgow we have a river like the Thames on a smaller scale, a tidal river, but with the disadvantage that it is an artificially made river, an artificially deepened river; it therefore allows of the accumulation of the sewage matters to a much greater extent; it becomes a kind of stagnant pool within five or six miles of Glasgow, and the stench is certainly very bad; but on the other hand the difficulty of finding an outfall and making away with this stuff is very great. You have for 30 miles down that river the whole outgoing during summer of the west-end population of Glasgow, every spot almost occupied by houses or pleasure grounds, or something or other which would make the finding of an outfall extremely difficult. In fact the engineers who were consulted on the subject came to the deliverance ultimately that no proper outfall could be got nearer than a point on the Ayrshire coast, about 30 miles from Glasgow, and it is doubted by many whether an outfall there even would not create so much nuisance as to be very greatly complained of.

8296. That is supposing you go to the sea?—Yes, that is supposing you go to the sea or the sand.

8297. But cannot you go to land without going that distance?—There is great difficulty in finding a sufficient amount of land so placed as to allow of the sewage being given to it on a large scale; a great deal of it would require pumping from the low level of a large part of Glasgow, and the engineering difficulties connected with it are so great that even Messrs. Bateman and Bazalgette did not profess to be able to dispose of the whole of the sewage even by carrying it 30 miles; they still counted upon throwing a great deal of it into the sea.

8298. Then the question is at present under consideration?—Yes, the question is at present under consideration, and it is a very perplexing one. I do not think anybody sees daylight through it.

8299. Are the privies which you have spoken of in connexion with those large lodging houses situated in such courts as are crowded by houses?—They are put wherever we can get them with the least nuisance. We are obliged to adapt our proceedings according to the emergency of the particular case.

8300. But practically as a rule are they shut in by the houses round them?—We choose the most open places we can get. They must be more or less near inhabited houses, but we choose the most open places that we can get for them.

8301. I think you said you had a regulation to which you could bring houses that there should be a minimum space of 300 cubic feet?—Yes; 300 feet for all persons above eight years of age, and 150 feet below eight years of age.

8302. But seeing that you have that very low amount of cubic space, have you any rules in connexion with it as regards ventilation?—In the common lodging-houses and in the houses where lodgers are received we shall have the power of regulating that by byelaws, and we do regulate it in the case of lodging-houses by byelaws by insisting upon the windows being open for a certain number of hours every day. That is a matter of police regulation.

8303. But you have no byelaws or other regulations for the enforcement of artificial ventilation in construction?—Not otherwise than this. I believe I did not explain before that the whole construction of new houses in Glasgow is under a court called the Dean of Guild Court, and this Dean of Guild Court has certainly very large powers, and might adopt any principle of construction almost that was clearly shown to be for the public interest; but the Dean of Guild Court in fact only secures what is obviously practicable, and no plan, so far as I am aware, has ever been proposed yet for ventilating the individual rooms of those tenement houses; no plan of such a character that the Dean of Guild Court would think it right to insist upon it. We always insist upon a certain amount of window space, and that the windows shall open at the top, but we have no elaborate plan of ventilation.

8304. But practically, I suppose, you find that the class of people who live in those houses are not fond of opening their windows?—Very little indeed.

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8305. Then you would think yourself, would you not, that artificial ventilation is necessary where you have so lôw an amount of cubic space as 300 feet, and with nothing but windows for ventilation?—I think that that would be very necessary if any plan could be pitched upon that was not liable to abuse, but we find that they stuff up all kinds of holes that may be made, and it is almost impossible to get people to do what is wanted.

8306. Having this Dean of Guild Court, I suppose you have a system of inspecting your houses before occupation, have you not?—No.

8307. Have they any definite system of inspecting houses before a house is allowed to be occupied?—No, they can only scrutinize the plans, and oblige the house to be built in accordance with the plan.

8308. Have they not any power of inspection after a house is completed to see that the plans have been carried out?—I presume so, because they have power to see that it is according to the plan.

8309. Therefore they can send an inspector?—Yes, the master of works is charged with that constantly. It is presumed that every building now put down in Glasgow is built so as to be approved by the Dean of Guild Court, and the master of the works is empowered to see that it is so.

8310. Would that approval have any reference to the number of persons to occupy that house?—No; that is regulated by the other law that I spoke about.

8311. But they having approved of the house, then the board of police could prevent an undue number of people occupying it?—They should prevent it.

8312. So that you have in fact sufficient regulations for the future for new houses?—We have, I think, sufficient regulations for the future, subject to the very great difficulty to which I have already alluded that we have not got enough accommodation, and therefore cannot enforce our own laws.

8313. In fact, I suppose the practical difficulty that you have in enforcing measures against overcrowding really arises from the absence of sufficient accommodation for the labouring classes?—Yes, and from the poverty of the people, from their being in many cases totally incompetent to pay, that is to say, either incompetent or unwilling, or by dissipation of their means otherwise, unable to pay the rent of a really good house. I have found by inspecting the valuation books that the largest number of houses put at any one level of rent in Glasgow at this moment, is at 3*l.* 15*s.* 0*d.*, whereas it absolutely requires, I think, from 5*l.* to 6*l.* to have even a good single-room house in the centre of Glasgow. It is impossible to have a good single-roomed house for less money than that, and therefore there is no doubt at all that whether from their own misconduct and irregularities of life or otherwise, there is a very large portion of the population that is literally unable, or at all events cannot be made able without a reform in their habits, to pay the rent of a really good house. And in further illustration of that deplorable fact, I may say that my belief is that there are more than 30,000 families in Glasgow out of about 95,000 families, or one third of the whole population inhabiting single apartment houses and many of them taking in lodgers.

8314. What class of men have you employed as sub-inspectors, or inspector of nuisances in Glasgow?—Very fair good men, they are intelligent men, not with any special education, but men who readily enough pick up the education that we want.

8315. Have they printed or written instructions for their guidance?—They have both written and printed instructions, and all kinds of precedents established with the constant supervision of their medical officers. The inspector goes out with his day's work provided for him. He goes to do certain things under the instruction of the district medical officer, and he comes back to him with his report.

8316. Does he make a daily report?—Yes, he makes a daily report as to what he has done, not always a written report in detail, but he comes into constant communication with the medical officer, and does his work under his eye.

8317. The medical officer having received that report, how do you secure prompt action upon it?—The medical officer is entitled, where prompt attention is required, to take it himself, provided it does not involve anything very revolutionary, where it is a matter of disinfection, or cleansing clothing, he simply takes it and does it. I have brought with me a book which contains the orders given, of which this is a record.

Glasgow, _____ 186

_____ o'clock.

House of _____

at _____

_____

Fumigate _____ apartments.

Whitewash _____ apartments.

Clean bedding of _____ beds.

Clean body-clothing of _____ person.

Straw for _____ beds.

_____

_____

_____

In other cases he gives them admission to the hospital, which is in this form:—

Board of Police, Glasgow, 1865.
(By order of the Magistrates' Committee.)

_____ 186

Name _____

Age _____

Address _____

Surgeon _____

Date of removal _____ 186

District.

Board of Police, Glasgow, 1865.
(By order of the Magistrates' Committee.)

_____ 186

Please admit into the hospital _____

age _____ residing at _____

_____

Certified by _____

_____ Med. Officer,

District.

And this is the notice which is sent to the inspector:—

Glasgow, _____ 186

Locality _____

_____

_____

Measures required _____

_____

_____

_____ District.

Sanitary Department of Board of Police,
59 & 61 College Street,
Glasgow, _____ 186

The Inspector of Cleansing is specially requested by Medical Officer of Health for the _____ district, to have the following sanitary measures adopted at

_____

_____

_____

_____

_____

8318. Would the cost of carrying out those measures fall upon the rates or upon the inhabitants?—It would fall upon the sanitary rate. All things ordered by the medical officers fall upon the sanitary rate. We presume that the inhabitants then are not expected to pay themselves for it, and it is paid for at the cost of the public.

8319. Then have you no system of making the person who commits a nuisance pay for it?—We could do so. All that I have been now showing the commission relates to the case of urgent action, where danger is immediately apprehended. If danger is not immediately apprehended, but a nuisance exists, we take action by compelling the parties to remove the nuisance.

8320. But that takes time, does it not?—Yes, that takes time; but that is the ordinary course of action where a chronic nuisance exists without any immediate apprehension of danger to the public health.

8321. What time would it probably take to carry it out; to enforce the removal by the person himself?—A very short time; a very few days. It is more generally enforced by calling him up and fining him for having created the nuisance.

8322. Do you do that by a summons?—Yes, by a summons before the magistrate.

8323. (*Earl of Romney.*) You were asked by Dr. Acland, with regard to that particular court to which you called attention, how many privies there were in it for 80 families, are you able to answer that?—I cannot answer that question at present.

8324. You stated that the river was very offensive, do you believe that it is unhealthy as well as offensive?—I believe it is unhealthy, but it is a very curious fact that the proof of injury to health is not very easily found. I believe on general principles that it is better to be without stinks, and I believe that all stinks on a great scale are on the whole unwholesome, but at the same time it is unquestionable that the districts in the immediate neighbourhood of the river have by no means the highest death rates, nor are they the districts most subject to epidemic disease.

8325. Is the water there salt or fresh?—It is brackish, the tide goes up and down.

8326. Where the salt water is mixed with the other water, is it not actually more offensive to the smell than where it is fresh water?—It is so much mixed that one can hardly tell. The fact is that for about six miles below Glasgow the refuse matter is just rolled about up and down for a long time. It was shown some years ago that a system of floats remained in the river there for a very long time, and it is presumable that a very great deal of the bad matter is just rolled up and down with every tide without being carried out to sea.

8327. Would you have the goodness to explain what you meant when you said that some way down below Glasgow the water remained stationary?—It was artificially deepened.

8328. But then the tide flows, does it not?—Yes, the tides flow, but they flow into a ditch. They flow into a channel artificially deepened, and where there is therefore not the thorough flushing that there would be in an ordinary tidal river.

8329. But the water must run up and down this narrow channel just as well as if it was a more extended channel?—Yes, but the artificial deepening makes a kind of stagnation; makes it into a ditch.

8330. But then they keep the channel dredged, do they not?—Yes, as well as they can; there is a great deal done to dredge it.

8331. How high does the tide flow above Glasgow?—It flows up to a weir which is at the upper end of the town. I believe that it does get higher than that, but to a very limited extent.

8332. So that there is no open flat land above Glasgow that could be got at for the purpose of discharging the sewage matter upon?—Not without a great deal of pumping.

8333. (*Chairman.*) The Public Health (Scotland) Act, 1867, to which you have alluded is, I presume, the general Act for Scotland up to that date?—Yes; the Act of 1867 repeals all previous sanitary regulations and Acts relating to Scotland, with the exception of the clauses which leave the powers of the local Act in Glasgow intact, so far as is required.

8334. But is there any general Sanitary Act on the Statute Book relating to Scotland previous to the date of 1867?—There are general Acts on the Statute Book—Police and Nuisances Removal Acts. There is an Act a few years before, I think in 1865 or 1864, that is the general police for Scotland.

8335. Does the Act of 1867 embody the previous Acts repealing them, and are they all to be found in the Act of 1867?—They are all referred to in the Act of 1867 in the beginning of it. They are all either repealed or left active as far as they are required, they are all made part of the Act of 1867.

8336. Can you tell us what was left active and unrepealed previous to 1867 in the Nuisance Removal Act, or the Diseases Prevention Acts?—The Nuisance Removal Acts are repealed, but their sanitary provisions are embodied in the Act of 1867.

8337. Are there no subsequent Public Health Acts relating to Scotland after the date of 1867?—I do not think there has been any sanitary legislation since that date for Scotland.

The witness withdrew.

(69.) Robert Clutton, Esq., examined.

8338. (*Mr. Bircham.*) I believe you are resident at Hartswood, near Reigate?—Yes.

8339. You are a surveyor and land agent in very considerable business, and have the care of estates in various parts of the kingdom?—Yes.

8340. Are you yourself an occupier of land to some considerable extent?—Yes, 600 acres.

8341. You are a member, and I think have been chairman of the Reigate board of guardians?—Yes.

8342. And of the highway board and also of the assessment committee there?—Yes.

8343. Has the grouping of the parishes into districts for highway purposes been found beneficial?—I think so.

8344. Has the benefit been found in improved care of the roads, and in the decrease of expense also?—The decrease in expense has been very slight, but there was a decrease during the time we had a very efficient surveyor, after the first three years of the Act being adopted.

8345. But probably in the first taking upon them of the duty, a greater outlay was made upon the roads than had been made by the separate parishes previously?—I do not think that. I think the money was much more judiciously expended, but there were some larger works undertaken.

8346. Would you extend the system of grouping parishes for highway purposes?—I should certainly.

8347. To the extent of making it compulsory, so as to put every parish in the kingdom under some district board?—I should. I am quite satisfied of the utility of the system if it is properly carried out.

8348. Can you afford to pay in a district for the service of better officers than you can in separate parishes?—Yes, you get a much more uniform management. The parish adjoining that in which I live, and in which I farm, namely, the parish of Reigate, used to be divided into five districts, each having its own surveyor, and in the course of two or three miles you went over the districts of three or four surveyors, each managing the roads in his own way, and very badly in most cases.

8349. You think therefore that it is by grouping only that you can get the means of paying an efficient

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officer and secure uniformity of practice?—Yes, that is my opinion.

8350. Have you had experience of the working of boards of guardians in the performance of sanitary duties?—Yes, I have.

8351. How has the system worked?—It does not work very well. In the board of guardians to which I belong we have a fairly good inspector of nuisances, but I happen to know that in other boards of guardians in the country they are much less efficient, and much worse paid.

8352. Could you state what the area of your poor law union is?—The area is 51,000 acres and upwards, and it includes 16 parishes.

8353. What is the salary of the inspector of nuisances?—It is 60*l.*

8354. You are aware, are you not, that under the present law the vestry in places not under the Local Government Act or special legislation is the sewer authority?—Yes.

8355. Do you think that the vestry of parishes generally would be found a proper authority for sanitary purposes?—I do not.

8356. Do you think that the action of the parties who would in such case be called upon to impeach the conduct of their neighbours is rather too near home?—Yes, I think so; that is the objection.

8357. And do you think that a board of guardians or some agglomeration of parishes such as the poor law union or the highway board would better perform the duty?—Yes, I think so, or by selected members from it. I might say in answer to your former question with regard to the vestries, that it is well known that the most intelligent occupiers or persons resident in the parish do not attend the vestries, so that the vestries usually get into the hands of inferior persons in the town parishes.

8358. Even if that were remedied, would not the pressure of local influence be mischievous in the working of vestries as the sanitary authorities?—I think so; it would render it inoperative almost.

8359. Have you considered whether any better local authority than either the vestry or the board of guardians or the highway board might be created for sanitary purposes?—I have thought a good deal about it, and it appears to me to be a matter of great difficulty. We want persons of greater intelligence and breadth of view to manage sanitary matters. I think in some way or other the justices ought to have to do with the management. The justices aided by, say, the chairman and deputy-chairman of the board of guardians, and the chairman and deputy-chairman of the board of highways would form a useful board.

8360. Do you mean the justices in petty sessions?—Yes, in petty sessional divisions, which are not always co-extensive with the unions.

8361. Do you think that an efficient board might be formed for the three purposes of the poor, the highways, and health, if the members of it were elected specifically with reference to the larger duties which they would have to perform?—I scarcely think so.

8362. Of course that would lead to the re-forming in some instances of the poor law unions, and to the forcing of parishes into unions for highway purposes?—Yes; it seems to me that that would throw so much labour on the individuals that you would scarcely get anybody to undertake it in the country, except persons with a considerable amount of leisure.

8363. Have you found in your experience mischief to result from the state in which cottages are in rural districts?—Yes, to a great extent.

8364. Have you considered how that state of things may be remedied?—I have been endeavouring for years to induce cottagers and farmers who have the control of cottagers, and landowners who have the control of farmers, to adopt earth as a system for getting rid of the nuisance of privies.

8365. But in the first place do you frequently find cottages in a condition not fit for human habitation?—Yes, certainly.

8366. Both as regards the buildings themselves and as regards the conveniences which are provided in connexion in them?—Yes.

8367. Can you suggest to the Commission any mode of preventing the building of such cottages, and of correcting those which have been already built?—The great thing to be desired is that the persons who have to do with cottages, either in the shape of landowners or of farmers, should themselves be impressed with the necessity of attending to sanitary matters which at present they are not. They are quite satisfied to leave things as they are in most instances.

8368. We doubtless find cottages built by speculators and small capitalists in the cheapest possible manner commanding rents which make a remuneration for such an outlay, but which would make no remuneration for a better class of building?—Yes; remuneration cannot be made in a rural district for such a cottage as a labourer ought to live in. The advantage of lodging him properly must be attained in another way, that is to say by the improvement of the man himself and his greater efficiency as a labourer.

8369. Does your experience lead you to think that the bringing of people near their place of work, and increasing their efficiency as labourers by placing them in better dwellings, is likely to operate largely in correcting the state of things which exists with respect to cottages in different parts of the country?—I believe that by degrees it is operating, but it operates rather slowly. In my own practice where there has been a demand for cottages, and I have been able to do it, I have refused to build cottages unless with a return of 5 per cent. It takes a farmer a good while before he makes his mind to pay the interest on 300*l.* or 330*l.* for a pair of cottages at 5 per cent., but we find that they are becoming more and more impressed with the importance of having their labourers nearer home and of a better sort, and they find that this does accomplish it.

8370. But would you recommend that the local authority, be it what it may, should have the power of laying down regulations to which the builders of cottages must conform?—I think so certainly; and it would be very desirable if it was practicable.

8371. Does it appear to you to be practicable?—I do not think that it is practicable at present.

8372. Have you some instances which you would be good enough to give the Commission with regard to cottages at Red Hill as contrasted with cottages attached to farms?—I am not sure that the facts connected with those cottages are really of any importance. They were built by a company soon after Red Hill began to be populous, in order to provide better dwellings for the over-crowded cottagers; but inasmuch as the company required five per cent. on their outlay, and they have always had it, it was soon found that the agricultural labourers could not occupy the cottages, or if they did occupy those cottages, that they could only do so by taking in lodgers to help them to make up the amount of rent, because they cost from 250*l.* to 340*l.* a pair.

8373. That is rather a large figure, is it not?—We cannot get good cottages built under from 300*l.* to 340*l.* a pair in Surrey to supply all the accommodation which they require, and which they ought to have.

8374. Are you of opinion that nuisances are a good deal attributable to the want of appreciation by landlords, farmers, and cottagers alike, of the mischief occasioned by them to health?—Yes, I think so.

8375. You have found that where there is bad privy accommodation, or a bad water supply, there is little appreciation of the mischief?—There is not sufficient appreciation of the mischief to cause them to take the matter in hand. They apppreciate it when it gets to their own dwellings, but they do not appreciate it in the dwellings of their cottagers.

8376. How would you propose to overcome this state of things?—I believe it is a matter of education, and it is by degrees being overcome. This matter is much more attended to than it was when I was a

young man, but still it is by too slow degrees, and I am in great hope that it will make rapid strides before long. It is so natural that the earth on which we tread, and which even the animals make use of for the same purpose, should be adopted by us for keeping clean the dwellings of the people.

8377. Are you alluding now to the extensive use of the earthcloset system?—Yes.

8378. Under a simple application of dry earth, and not upon any special plan, I presume?—Yes, we are applying it now in all sorts of ways, in a rough way if we cannot get it done in a better way. I have used it myself for 25 years.

8379. You have used dry earth as a disinfectant?—Yes, and for the collection of everything that is in the character of manure about the house; and it amounts to a very considerable quantity in the course of a year if it is properly attended to. For instance, all my chickens roost over ashes or burnt earth, and unless a person has tried it and seen what the accumulation of a year is he would have little notion of the quantity and the value of it.

8380. Are you of opinion that a better class of inspectors of nuisances is necessary to effect sanitary reforms?—I think so. I think that the law is almost a dead letter in a great many districts, there are so many private interests interfering with it; it wants to be an independent authority.

8381. But if you had an "authority" of calibre to be independent, you must have a sub-inspector travelling over a comparatively small area?—Yes, the area of the union, for instance.

8382. It has been suggested that there should be an itinerant inspection of a higher class, and proceeding from a central authority, and visiting the country periodically like the Factory Inspectors, charged with the duties not of correcting, but of pointing out omissions of duty on the part of the local authorities. Would you approve of that plan?—I think it would be a good plan.

8383. Do you think that such inspectors might operate usefully in distributing information of a popular character upon sanitary subjects?—I think so, certainly. It is a very unpalatable subject, and it is very difficult to make progress with the farmers at present with regard to it.

8384. If suggestions were made in six or seven adjoining parishes, and a visit was paid there afterwards to see what had been done, and some were found to have in degree or fully attended to the suggestions, whilst others were found to have neglected them, do you think that public opinion would operate upon those who had neglected their duty to bring about a better state of things there also?—Public opinion has not taken that direction at all in the rural districts yet.

8385. It has been thought that those inspectors might not only leave with the local authorities whom they visited a minute of what might be corrected, but that this report might also be published. Does it appear to you that such a course might cause public opinion to apply itself usefully to the negligent districts?—I am afraid that public opinion would not do very much for it. It is astonishing how little one parish cares or knows anything about what another parish has done.

8386. You find, do you not, great unwillingness in rural districts to entertain sanitary subjects at all?—I have found very great unwillingness in the adoption of the earth cure or in the working out of any system.

8387. Do you think that this proceeds from disinclination to incur expense or from want of appreciation of the importance of the subject?—I believe both these reasons operate. There is an apprehension of its being costly, and for want of appreciation of the importance of the subject they are unwilling to bestow labour upon it.

8388. Have you had experience in parishes with open soils, where the water supply has been a good deal damaged by the leakage of sewage and noxious matters?—Yes.

8389. That state of things would obtain, would it not, in oolite soils and in gravel soils?—Yes, in almost all soils to a great extent, but more especially is it the case in the oolite and the chalk.

8390. Would you think that the introduction of the dry earth system under such conditions and in such places would be a very useful course?—We think so, and we have actually introduced it into Gloucestershire, but we find that it is not worked well, owing to the carelessness of the cottagers.

8391. Do you think it would be salutary that the local authority should have the power of insisting on its introduction?—Yes, I do think so. Of course it would be very much more desirable that people should appreciate, and themselves carry out, those works; but otherwise I consider it so important that I would compel it rather than not have it.

8392. In those kinds of soils it is very difficult, is it not, to make cesspools and ordinary privies impervious to water?—Yes, it is difficult if they are of any size. If there are cesspools at all they should be small, and they should daily have earth thrown upon them.

8393. And yet you have found that, with the cesspool leaking, the well upon which the family depends for its water is in close proximity to it?—Yes, very frequently.

8394. Would you arm the local authorities with the power of filling up wells when the leakage of the sewage was poisoning the water?—They might be emptied and cleansed, and the cause removed. It would be rather a strong power to entrust to them to compel the filling up of wells. The wells are very valuable in some districts; in the Wold districts for instance.

8395. Do you find that some of the class of artizans, mechanics and others, above farm labourers, are alive to sanitary questions, and to the importance of attending to those matters?—Yes.

8396. Have you any particular instance which you could mention with respect to the property of Baron Rothschild?—It is recorded of Baron Rothschild that he has adopted the earth-closet system upon his estate; and in the first instance he supplied the dry earth, as I am told, and carried away the contents, giving all his cottage tenants an intimation that whenever they wished to have it themselves and chose to supply their own dry earth, he would cease to take it away; and I am told that a great number of them have undertaken to supply the earth and take away the produce.

8397. You instance that as an example where the earth-closet system has come into operation usefully in a rural district?—Yes I do, where the landlord has been fully impressed with its importance, and has taken the trouble to promote it.

8398. In those cases how do you get rid of the ordinary sink water, and such other sewage matters?—I do not know how that has been managed there; that is a difficulty certainly.

8399. Have you had any experience of the uncertainty and bad working of the present law, in the case of the parish of Horley?—Yes.

8400. There, I believe, nuisances were found to exist which it lay with the board of guardians to correct?—Yes.

8401. The board of guardians were appealed to, and they interfered?—Yes.

8402. But it was subsequently found, was it not, that structural works were necessary for the purpose of correcting the nuisance; the board of guardians undertook these structural works, and when they had incurred expense, they found that they had no power under the existing law to carry them into effect?—Yes, without the co-operation of the vestry.

8403. That is to say, that the vestry of the parish where the mischief arose was the proper authority to execute a structural work, and not the board of guardians?—Yes.

8404. Has that uncertainty of the law, and the

duplication of the local authority, led to considerable inconvenience?—Very great.

8405. Would you be of opinion that whatever the local authority may be, there should be but one charged with all duties of this nature in each place?—I think so; at the present time the powers are almost conflicting.

8406. Have you known instances of fever breaking out in otherwise healthy localities occasioned by the pollution of wells by privies?—Yes.

8407. Can you state an instance where that has taken place?—I know several instances. I may mention the case of the village of Pyecombe, where, when the plague was in London, almost every person in the village died; and the same took place when a very serious outbreak of cholera happened in London some 12 years ago. This being on the southern slope of the chalk of the South Downs, I can scarcely see how it could have happened but from the pollution of their wells.

8408. But how would you propose to anticipate and provide for such a mischief as that?—I should insist either that earth-closets were used or that watertight cesspools should be constructed, into which earth should be thrown and removed at short periods, by means of a flap at the back of the closet. We are using many of them; we have built cottages to a very large extent, and that is the form in which we find it is most satisfactory to the cottagers.

8409. As there is great difficulty in making those cesspools watertight, as a last resort it would be desirable, would it not, that the local authority should have the power of positively filling up a well which was producing noxious water?—Yes; if it was so impregnated as to be hopelessly polluted.

8410. And would you give the local authority the power of furnishing a water supply at the expense of the property?—I have not considered that matter.

8411. At present the law gives the local authority the power to supply but it must be for the general use of the inhabitants, not of individual properties?—I think that would lead to a great deal of trouble.

8412. Is there any other matter which you would desire to bring under the notice of the Commission?—I do not recollect any at this moment.

8413. (*Mr. Shaw.*) I gather that you think that the public mind at present is very imperfectly alive to the utility of sanitary measures?—That is so.

8414. And it requires to be made more so?—Yes.

8415. And if so, that would materially strengthen the cause of sanitary improvement?—Yes.

8416. Do you think if our system of local government were so modified as to introduce a larger number of persons of a better educated class into the actual administration of the sanitary laws it would be a useful step towards introducing practical knowledge and creating such public opinion?—Yes, it would.

8417. Do you think that such persons would be more likely to be induced to take part in sanitary matters if they could do so without being obliged at the same time to undertake the burden of ordinary parish affairs, that is to say, supposing that the guardians, or whatever the local authority were, had power to appoint a committee, but that upon that committee they might also appoint persons to serve who were not guardians?—I think that would be very desirable.

8418. Do not you think that if landowners, for instance, were accustomed to take part upon such committees it would exercise a great influence upon their minds in drawing attention to the subject and inducing them voluntarily to improve their own cottages without being compelled?—Yes.

8419. As regards water supply, a question was put to you about closing wells. I suppose that what you really want is that there should be power to seal up a well or stop the use of a well unless and until it is put right?—Yes.

8420. Would not that be better than filling it up?—It should be so dealt with as to make it impossible that it should be used after it was thoroughly condemned as impure.

8421. But the use should be stopped until the water was brought back into a pure condition?—Yes, stopped by any means until then.

8422. Has there at all been brought before you a plan which was suggested to us the other day of providing water for cottages by slating them instead of tiling them, and then collecting the water from the roof and letting it flow into an underground reservoir sufficient to contain a supply for six weeks?—We do that in all cases in the fens and other places where the water is impure.

8423. When the local board specifies or orders anything, would you have it specify the means that were to be adopted, as, for instance, earth closets or anything else, or would you have it merely say, This must be put right and you maytake your own means of doing it, so that we be satisfied of the end that you attain?—Yes, I think that is all they can ask. Suggestions might be made, but absolutely to direct a certain course of procedure would be rather a strong measure.

8424. Do you think that the guardians would be the best local authority?—I think a committee selected from the guardians, such as we soke of just now, would be a desirable body.

8425. Supposing that body constituted, would you think it well that there should be an appeal to any intermediate body, as for instance a county board, or anything of that sort, or would you have an appeal direct to the Government, the Secretary of State for instance?—Yes; unless you have a Government board for sanitary purposes.

8426. Would you go straight to the Government or would you have an intermediate county body as a court of appeal from the local authority?—That is hardly necessary if you have magistrates on the sanitary committee of the local board.

8427. Do you think that gentlemen in that position would be disposed and likely to act?—I think so.

8428. (*Dr. Acland.*) Do you think it would be possible to lay down models for cottage building in agricultural districts, or to make byelaws which would be generally acceptable?—I think it would be well to state what a cottage should not be rather than what it should be. That it should contain a certain number of rooms and that it should not be built with less than three bed rooms.

8429. Do you think that that would be a just regulation? surely there are districts in which smaller cottages are actually wanted for widows and old people without children?—In rural districts, for instance where a man and his wife have no family, a cottage with two bedrooms would of course be sufficient, but cottages with three bedrooms form good lodgings for single men, and they are very desirable.

8430. It would require extreme caution, would it not, in laying down positive regulations?—I think so.

8431. No doubt in your great experience you have found villages in which there is a real difficulty on the part of the poor to obtain water?—Yes, it is so at times in dry seasons.

8432. Villages depending entirely upon wells, and those wells very few in number?—Yes, villages often, I am sorry to say, in hilly counties depend upon wells which become dry in dry seasons, or more frequently ponds.

8433. Could you suggest any regulations which should be compulsory for the purpose of securing a water supply in such districts, or is that an impracticable hope?—There is no doubt that it can be accomplished by gathering grounds and tanks, but that would involve a very considerable expense.

8434. Has it been suggested to your mind in what way that expense could be met in very poor places, or must it be left in all cases to local effort?—I scarcely see how it could be made compulsory.

8435. Would points of that kind be elucidated if there were sanitary inspectors in different parts of the country charged to look after local difficulties, and to exercise skilled and unbiassed judgment on

the case?—Yes, I think so. It would lead to the education of the rural population with regard to the importance of these matters.

8436. You would not think it an exaggeration to say that there are serious local evils which could easily be remedied if there were skilled inspectors whose business it was to point out the readiest remedy?—I think so.

8437. (*Chairman.*) You stated, did you not, that the inspector of nuisances in your district are paid such salaries as 60*l.*?—The inspector of the Reigate union is paid that salary. He is an intelligent person, but he has other avocations, and he does not devote his whole time to it.

8438. Has he any other office connected with sanitary administration, such as relieving officer?—No, he has not.

8439. Do you know whether it is usual in your neighbourhood to make the relieving officers inspectors of nuisances?—Yes, it is rather common; and paying them a small salary.

8440. Do you think them good men for the purpose?—No, I do not think so. I do not know why they should not be if they were sufficiently independent and properly paid.

8441. Do you think that the county police officers would make better inspectors of nuisances?—Ordinary policemen I think scarcely would; the officers might, at least I do not see why they should not; they are usually intelligent people, but an ordinary policeman is sometimes very unfit for it.

8442. Do you think that the people generally would dislike the police being so employed?—I do not think that it would be popular.

8443. Boards of guardians at present have no other sanitary function besides the removal of nuisances, have they?—I think not.

8444. When you talk of agents making a rule that farmers should pay five per cent. upon the outlay upon cottages, what amount of interest on the cost of cottages does five per cent. represent?—Five per cent. on the whole cost of a cottage, not including the ground on which it stands.

8445. How much of building interest does five per cent. represent?—Cottages ought to pay seven per cent. even at five per cent. it is a very heavy rent for the farmer to pay for a cottage.

8446. Then the rule that they should pay five per cent. is not meant, as a rule, to cover the real outlay?—Not to cover the usual interest upon the building, but it is a sort of division of cost between the landowner and the tenant. I do not mean to say that five per cent. for cottage building is a good speculation, especially if they are slightly built.

8447. When you said that the local authorities you thought could not lay down regulations as to the construction of cottages, or at all events that it was not practicable yet, why do you think that it is impracticable now? What difficulty would there be in giving the local authorities such a power?—I think it would be very unpopular amongst landowners, although there ought to be no more practical difficulty in that respect than there is with regard to towns.

8448. Do you think that landowners, even if there was ample appeal from the decision of the local authority, would dislike the control of such a body as the board of guardians in matters relating to the construction of their own cottages?—I think so.

8449. When you express an opinion in favour of permanent itinerary inspectors, have you at all thought what it would cost to have such a body of men?—No, I have not; it would not want a great many.

8450. If it was costly to have such a body, do you think it would be a popular proposition?—I do not think it would be popular, but as long as it conduced to health I think it ought to be so.

8451. Do you think that the rates in the country round you for local sanitary purposes are heavy?—I think that the parochial rates are altogether very heavy, and increasing.

8452. By those do you mean the poor rates, or all rates?—Poor rates, highway rates, police rates, and county rates; they have increased of late years very considerably, and are increasing.

8453. Do you think there is a fear of that sort which renders the people reluctant to have more complete local government?—The people are quite satisfied to go on as they are, taking the bulk of them.

8454. Is it that they do not care about the evils existing, or is it that they are afraid of greater expense?—I think the strongest motive operating upon their minds is the fear of increased expense, and they do not appreciate the evil.

8455. Are there many nuisances in the country round you which are not removed?—Yes, a great many.

8456. Do you believe that typhus fever and other ill health are occasioned by them?—I have no doubt of it.

8457. Do you think that the boards of guardians are not aware of that fact?—They are aware of it, but they find it very difficult in the case of large owners to carry out the law.

8458. Are not the board of guardians in your neighbourhood sufficiently intelligent to know that chronic typhus fever produced by the non-removal of nuisances increases the rates?—Yes, they are aware of it.

8459. Do you think that they do not see that a good system of removing nuisances, instead of increasing expense, might reduce the expense of the union?—I am afraid they have hardly got up to that as a body, no doubt it will come by and bye.

The witness withdrew.

(70.) John Clutton, Esq., examined.

8460. (*Earl of Romney.*) You have had great experience in the fen districts, have you not?—Yes.

8461. How is the water supplied there?—Very much from tanks.

8462. Is it carried off from the roof?—Yes.

8463. Does that plan answer thoroughly well?—It is the best supply which we can get; we are so far from high land in many of those districts that we cannot get fresh water into them.

8464. During the last summer did the supply fail?—Yes; they had to go very far for water in many districts.

8465. Did they fall short?—Yes; but we have great trouble even with tanks. I have one near Boston which was made perfectly water-tight, but you cannot get the workmen to make the joints of the pipes sufficiently accurate, and the soakage from the yards gets into them; there is great trouble in those districts to keep the yard soakage from them.

8466. How near do you put the tank to the house?—We put the tank as close as possible to the house so as not to interfere with the foundations of the house.

8467. A witness the other day stated that foul matter and sewage from the house would drain into the tank; can it be so?—Yes, it can be so, if proper provision is not made for carrying away the impure matters from the house.

8468. But a tank that is sound inside would not let the water out of the tank. Is it in such a condition that when the tank water fell short the soakage from the land outside could go into the tank?—It is not the tank itself, it is the junctions of the pipes leading into the tank where the defect exists.

8469. It is impossible, is it not, that the soakage can get into the tank itself?—Of course, if the tank holds the water you cannot get anything into it, but it is the junction of the pipes, and it is just possible that the pipes carrying the rain water from the house may have to cross the pipes carrying the impure water away from the house.

C. Clutton, Esq.
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8470. The fact is that it really requires very great care, the same as in laying any water pipes, just to see that they are well laid, and that the joints are properly put together?—Yes; and that is one of the great difficulties in cottage building, and a great cost to the landowner. You cannot trust the builder without having a clerk of the works, or some one there to superintend it, which adds very materially to the cost of cottage building, if properly done.

8471. With regard to such an inspection as you have heard of, in the examination of your brother, do you think that such an inspection on the part of some authority, with regard to the building of cottages, would be much objected to by large owners?—Yes, I think it would be objected to.

8472. Do not you think that that is rather a thing which would soon pass away?—I think so. I cannot myself see why there should not be the same control over the building of cottages in rural districts as there is in town districts.

8473. You have no doubt that it would be very desirable?—Very desirable, indeed. I do not think you can control the number of rooms in a house, but I think you might control the size of each room, the cubical area of each room.

8474. (*Chairman.*) As to the number of rooms, might you not say that a house for a family should have so many rooms, and a house for a single person should have so many rooms?—If you build a house for a family with three rooms you can scarcely prevent it, if the tenant chooses to take in lodgers, or a second family. It is most difficult to prevent it.

8475. (*Mr. Russell Gurney.*) Is not that very often one of the conditions in leases where good cottages are built?—It is for the large landowners, but not for the small ones.

8476. (*Earl of Romney.*) Then it is not the state of the law that prevents it, it is, that the parties do not choose to do it. When a superior landlord lets his cottage he may make it a part of the condition that a person, upon becoming the occupier of a cottage, shall not take in lodgers without his consent?—It is frequently done so; still we find, notwithstanding such covenants, it requires constant inspection. There is another great evil in cottage building, which is dampness, to prevent which causes considerable increased cost in our cottage building. They are all now built by us with hollow walls, and a damp course on the level of the ground to prevent any damp rising. We find that that adds more to the comfort of a cottage than almost anything else.

8477. A hollow wall does not increase the expense, does it?—Yes, it does, certainly. It will cost nearly 10*l.* a cottage more; and it is not only the actual cost of the work, but you must have it well looked after, for if you leave it to an ordinary builder he leaves a quantity of mortar on the iron ties, and the wet will pass along it in exposed districts: it is not only the increased cost of the brickwork, but also the superintendence.

8478. Have you any experience of concrete?—We have not built any cottages of concrete yet.

8479. (*Mr. Shaw.*) I understand that the regulations which you propose to lay down, as to cottages, have reference to the size of rooms, damp course, and hollow walls?—Yes, if it were possible to establish some central authority I would rather do so, and if there were local boards of health established they should make byelaws for those objects.

8480. Those are the objects to which you would direct their attention?—Yes.

8481. Would you prevent their building upon a site which was notoriously water-logged unless the water was properly got rid of?—Yes; in fact I would take very much the byelaws of the Dover Local Board, because I think that they are good ones; they control the size of the house, to a certain extent the situation of the house, and the construction.

8482. (*Earl of Romney.*) Is not the cost of building increased by 25 per cent. owing to the increased cost of labour?—Yes, the increased cost of labour and materials. Bricks are dearer. The price of bricks depends upon the labour; it is all a question of labour. There is a vast difference in the cost of cottages in different districts. We have now just completed some cottages in Essex for 25 per cent. less than we are building the very same class of cottages for in Devonshire.

8483. What is the cause of that?—The cost of cartage is one great ingredient in the cost of materials, and the cost of mechanics wages. I have brought with me a paper which will show the difference in the cost of cottage building in 1859 and 1868, which, if the Commission desire it, I will hand in. (*The same was delivered in, and is as follows*):

COST OF LABOURERS' COTTAGES.

In 1859 and 1861.

Cost of a pair of labourers' cottages, exclusive of fuel, houses, fencing, &c., as added below				£191	0 0
Add for bakehouse and fuel-house	£25	0	0		
Do. privies	10	0	0		
Do. fences	10	0	0		
Grates and coppers	10	0	0		
				55	0 0
				£246	0 0

In 1867 and 1868.

Cost of a pair of labourers' cottages, exclusive of fuel-houses, bakehouse, and privies and fencing, as stated below				£248	0 0
Add for bakehouse, fuel-house, oven, &c.	£30	0	0		
Do. for privies	10	0	0		
Do. fences	10	0	0		
Do. grates and coppers	10	0	0		
				60	0 0
				£308	0 0

These cottages are just completed in Hertfordshire for this amount.

Difference of cost of cottages in 1859 and 1868 is about 22 per cent.

The average cost per pair of the cottages we are now building is				£256	0 0
Add for bakehouse, fuel-houses, privies, grates, coppers, and fences, say	£60	0	0		
				60	0 0
				£316	0 0

8484. (*Chairman.*) How could either materials or wages be less in Essex than in Devonshire?—The cost of cartage in Devonshire is a most serious item; the hills are exceedingly against you; in the interior of the county you have no water carriage, and the railways are very far between.

8485. (*Mr. Shaw.*) You spoke of the power to control the size of rooms in a cottage in order to prevent over-crowding; would not the true principle be to let people build their rooms whatever size they liked, but to give them notice that you would not allow the room to be inhabited by more than a number of persons, which allowed a certain number of cubic feet to each individual, and you might afterwards proceed against them for over-crowding?—It is a most difficult subject. If you have a perfectly built

room, it is almost impossible to control the number of people put into it.

8486. It is what you do in London, is it not?—You nominally do it, but you practically do not do it; it is not efficient. We have a great deal to do with the east end of London, and we find they are very much crowded now.

8487. (*Dr. Acland.*) Should you object to say what you would consider the best way of constructing a floor?—I think that the living room of all cottages should be floored with timber.

8488. Have you considered of what kind of timber?—We almost entirely use foreign timber.

8489. Have you ever adopted the plan of blocks of beech end-on?—I have seen it done.

8490. Would you recommend it?—I see no objection to it at all.

8491. (*Mr. Bircham.*) All those matters would have reference, would they not, to the locality in which the particular cottage is situated?—Yes.

8492. And therefore had better be the subject of a district byelaw than of any attempt at general legislation?—Yes. I do not think that you can make any general regulations for that purpose.

8493. (*Dr. Acland.*) Can money be borrowed on a large scale for cottage purposes under the Lands Drainage Act, or any other Acts of that kind?—I am not aware of any large scheme for cottage building. There is an Act for borrowing money from the Government for building cottages, but we have never acted upon it. I think they have power to advance money at 4 per cent., but I am not well informed upon that subject.

8494. There are private companies of that kind, but is there any Government method?—I think not. I belong to a drainage company, the Lands Improvement Company, which have power to advance money for those purposes; but all the plans have to be submitted to the Inclosure Commissioners for their approval as to construction. I believe that that Act was passed to enable incapacitated parties to borrow money, and control is exercised to prevent an inheritance being damaged by the imperfect construction of buildings.

8495. There are, I have understood, some plans for building cheap cottages issued by private companies, but are you aware whether the slenderness of the materials under their specifications does not make them sometimes undesirable as models?—That is so, no doubt.

8496. Of course, by such methods the nominal price of cottages is reduced to almost anything?—Yes, practically so.

The witness withdrew.

Adjourned to Thursday, the 18th of November, at 12 o'clock.

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APPENDIX.

APPENDIX I.

(The Right Hon. LORD ROBERT MONTAGU, M.P.)

(1.) Extract from the Report of the House of Commons Select Committee on Sewage, 1864.

The Secretary of the Local Government Office, as well as Mr. Rawlinson, the inspecting engineer, while concurring in the necessity of appointing a board for each catchment basin, gave a decided opinion that the duty of the watershed board should be merely to supervise the action of the local boards within their district, and enforce an obedience to the law in causing them to desist from polluting the streams; but that the necessary works should be carried out by the local boards alone.

We recommend that the important object of completely freeing the entire basins of the rivers from pollution should be rendered possible by general legislative enactments, enabling the inhabitants of such entire districts to adopt some controlling power for that purpose; but it should include a provision for compelling local boards to render the sewage of their districts innocuous by application to the land for agricultural purposes.

(2.) Extract from the Evidence taken by the Sewage Committee, 1864.

2992. (*W. J. Ffennell, Esq., Commissioner of Fisheries, examined by the Chairman.*) It has been proved in evidence, and it stands to reason, that if one town stops the sewage from running into a stream, and another town allows it to run into that stream, the pollution remains as much as if both towns allowed the sewage to run into the stream?—It is not quite equal, but it is very bad.

2993. Then are you of opinion that there should be one authority over the whole catchment basin?—Certainly.

2994. Are you of opinion that there should be a separate authority in the case of each catchment basin, or that there should be one central authority in London?—There should be a central authority in London; but I do not think that you could work without deputies in the districts. Some catchment basins are so large that they must require two functionaries, such as the Severn or the Trent; whereas in other districts one functionary would be sufficient for each, or perhaps for two or more basins.

2995. But still there should be a unity of action and one authority throughout the catchment basin?—Certainly.

3184. (*S. H. Gael, Esq., examined by the Chairman.*) Then in fact each town which is on a stream, and sends its sewage into that stream, sends it on the next town below it?—So it appears, although the law says that they are not to create a nuisance.

3185. In fact they do it to preserve their own health and to the injury of the health of the next town?—Yes.

3186. Then in one basin of a watershed, or what is technically called a catchment basin, it is of very little use for one town to prevent its sewage from going into the stream, unless all the towns above it in the same catchment basin adopt the same precaution?—There is the difficulty about the contributions in the case of each catchment basin.

3187. For instance, although we may drain London and send our sewage some miles down the river, still we are drinking water which is polluted with the sewage of some 800,000 persons; is not that the case?—Yes, and all that they do in London is to take the sewage to some other place.

3188. But do not the London people get water which is polluted by the sewage of Oxford and Reading, and of other places on the Thames?—No doubt.

3189. Have you heard of the case of Salford, where they proposed to utilize their sewage at an expense of 80,000*l.*; they proposed then that the other towns in the basin should do the same, but those other towns refused to adopt the remedy, and so the plan was abandoned?—I have heard of that.

3190. With regard to gas refuse, are there not Acts preventing gas refuse from flowing into rivers?—All Gas Acts prohibit the gas refuse from going into rivers under very heavy penalties, but they do not prevent the practice.

3191. Do you think that there ought to be some board or some authority for each catchment basin, which must be appointed with adequate powers to prevent the pollution of streams?—I think that taking analogous cases, one of the closest of which, perhaps, is the late legislation upon salmon fisheries, it would be requisite to have some sort of district and some sort of body, which one may say is exemplified in the different way of treating those salmon fishing questions in England, in Ireland, and in Scotland. You may set about it in different ways. I think that there is no board in England for salmon fisheries, but there is a board in Ireland and there is a board in Scotland, under which they make a jurisdiction and have the power of enforcing the law against parties who pollute the rivers to such an extent as to destroy the fish; that is an active executive board with power to levy rates in order to enforce the law.

3192. Does their authority extend over the whole of Ireland or of Scotland, as the case may be?—The commissioners' authority extends over the whole of Ireland and of Scotland. They form districts and appoint a board, and they or the board have authority and power of instituting prosecutions.

3193. Do you conceive that that would be better than to have a separate local board for each catchment basin or watershed?—I think that you could not have a mere local board for each town. If you went upon that principle you must have some delegates from the several boards to meet upon the common concernment of the outlet.

3194. Does it not seem to you that if unity of action is preserved throughout a catchment basin, that would be sufficient to prevent the pollution of the stream which drains that watershed?—I think that if there was a powerful board that could enforce the law, as well as agree upon some plan by which the towns themselves would cease to be contributaries to these nuisances, perhaps it might be got rid of; but it is attended with a vast deal of difficulty, because it involves not only the question of the town, but also the question of the trade nuisances on the rivers.

3195. Supposing that there were this board for a catchment basin, and that exactly the same powers were given to that board which are given to any local board of a town, do you not conceive that that would be sufficient?—No, I think not.

3196. Why do you think that it would not be sufficient?—I think that it would require some superior authority. I do not think that a local board of itself would ever devise the means of dealing with the nuisance.

3197. If those local boards were put under the Home Office, or under the Board of Health in London, and the Home Office should issue a *mandamus* to make them enforce the law, would not that be better than to have a central board in London?—That would involve an inspection by some officer appointed by the Home Office, some authority to take proceedings, some fund out of which the expense of the proceedings is to be defrayed; and in fact, if you trace it out, it requires pretty nearly the whole machinery of a central authority and a district authority also.

3203. Then we come exactly to the same point as before. If the Local Government Act seems to work well when confined to local boards of towns, why should not a similar law work equally well if, instead of having the local boards of towns to deal with, you had a local board extending over a whole catchment basin?—It would require some one to appoint the catchment basin; that is to say, to define the district, which is, in the first place, the business of a central authority.

3204. Has not the district been already defined geographically by the watershed?—The district, by nature perhaps, may be defined, but that is not sufficiently definit to work upon by any process of law.

3205. Supposing that your object is to secure the discon-

tinuance of the pollution of streams of water, and therefore that you must have unity of action throughout the whole catchment basin or watershed, would it not be the best means of obtaining that object to appoint a board for the catchment basin which should have exactly the same powers as are given to the local boards now under the Local Government Act?—Yes; but in order so to do, Parliament cannot itself legislate in each case; they must have it brought forward by some authority. It must be propounded; in fact, ready cut and dried to their hands. It involves the necessity of an investigation on the part of some of the Government authorities, in order to ascertain the district which is to be made and exactly defined, so as to form the jurisdiction of the local authority.

3206. Supposing that we were to say that the Local Government Acts, instead of applying to towns and boroughs, should apply to those basins which are geographically defined by watersheds, would not exactly the same machinery and the same amount of inspection be as efficient in that case, or even more efficient, than it is now with regard to the numerous little local boards of all the towns?—I think that it would be requisite to keep a much stricter hand over them, the subject being a great deal larger and involving a great many more interests both public and private; and I think that it would be necessary to have a much closer contract on the part of the governing authority.

3207. Then you are rather in favour of one great central authority instead of those local boards?—A central authority may appoint the local or district boards, just as in the case of the Irish and Scotch salmon fisheries, where they take the stream and all the tributaries of the stream. But the commissioners there assign the districts in the first instance to the boards and authorities who are to carry out the law locally on these several rivers and their tributary streams. Amongst other things they have this very case to provide for: they have power to prosecute traders and manufacturers whose works pollute the streams.

3208. Then how far do you agree with the suggestion which has been made to you? You allow, do you not, that this is for the general good, and that therefore it must not be left to individual action?—Certainly I think so.

3209. And you are also of opinion that it ought to be under local boards for the catchment basins, but you think that those boards ought to be more directly under the management of and appointed by a central authority in London?—The district should be assigned, I think, by some central authority. The boards might be elected or appointed in some way, but that is quite a subordinate question.

3210. Supposing that instead of assigning the district we were to take the appointments of nature, would that in your opinion work satisfactorily?—I do not think that you could successfully do that.

3211. Why could not that be done?—Because, in order to have anything safe and practical, you are obliged to define so closely by maps and plans, and metes and bounds, that I do not see how the object could be obtained by taking the mere geographical limits of the basins.

3212. Can anything be more definite and more minutely defined than a watershed?—If it involves the question of taxing all the people in that watershed it would then become a question of which of the owners of several of the places within that watershed were at all interested in the question, and whether they ought to be comprised in that taxation or not.

3213. Then is the only difficulty that as to the taxation?—There is that of jurisdiction in all questions.

3214. Then would you leave the definition of the district to some central board in London?—Yes.

3215. Would you leave the appointment of the chairmen and members of these local boards to the central authority?—No; they might be locally appointed.

3216. Perhaps the chairman of the quarter sessions and the chairman of the board of health should be *ex officio* members, and the rest should be elected by the ratepayers; would that be your view?—Some expedient of that sort might be adopted.

3217. Are you aware that some of these catchment basins cover an area of 2,000 square miles?—I believe that some of them comprise several counties; because rivers are so often the boundaries between counties that they would include several counties.

3218. In order to prevent travelling expenses being an item of this board, ought you not to have a high qualification for election, so that members should pay their own expenses?—I really am not prepared to go into those detailed questions.

3219. What powers would you give to those boards? would you give them the same powers as are given under the Local Government Act?—They would require more extensive powers than those.

3220. Under that Act they have power to raise rates, have they not, as well as to prevent pollution?—Certainly.

3221. And have they not power also to enter lands to carry their works through, just as a railway has?—Clearly so; just the same as a railway, except that they do not take the surface of the land.

3222. And have they not power to lease for the establishment of these works?—They have power to take land on lease.

3223. They have power to purchase land, have they not?—They have power to purchase land by voluntary arrangement; but that would not be sufficient. They would require compulsory powers in many cases, but under the Local Government Act they have voluntary powers only.

3224. Do you think that compulsory powers would be necessary?—In some cases I think they would.

3225. Would there be any other powers necessary?—I think that probably it would be necessary for them to make rules and regulations of the nature of the old sewer ordinances.

3226. Would you allow each district to make its own rules and regulations?—They would have to be controlled, because everything which is effective in this way must intrude very largely indeed into what may be called individual liberty. Indeed there are so many things done that are productive of the pollution of rivers, that if the process of cleansing them is to be put into operation fairly and equally, very considerable control must be exercised over operations in houses, in manufactures, and in land, all of which tend more or less, in the way in which things are managed now, to produce that pollution; and it would not do to deprive manufacturers, for instance, of what they consider to be their vested privileges, unless you put control upon the contributions made by the land to the nuisance; nor would it be right to throw any impediments in the way of ridding the houses of the sewage matter.

3227. But you consider, do you not, that something of the sort is necessary?—No doubt, something of the kind is necessary, if the present state of things is ever to be altered.

3228. According to the evidence which you have already given, it would not be contrary, either to the principles of ancient law or of modern legislation, that such a course should be taken?—I think it is clearly shown to be conformable to the principle of ancient law, and also to the modern cases.

3281. Under those circumstances what controlling power would you bring to bear upon the local board?—That involves a question of forcing local boards to do their duty, and that is a question upon which the legislation of this country is very deficient indeed. An authority like a local board of health is one of the most difficult to call to account for not doing its duty than can be conceived.

3282. You have paid great attention to this subject; can you suggest any controlling power under the circumstances which I have brought under your notice?—I think that for preventive purposes a control such as has been suggested by the noble chairman might be adopted. My opinion is, that to take measures for the prevention of those inconveniences is by far the most promising course to adopt; but how far it is consistent with considerations of expense, and other questions, is a matter that would have to be determined by the different localities. I do not say that you could have a general law all over the country, that the people who should consider that they constitute the watershed district should form themselves into such district, elect a governing body, levy rates, and prosecute by means of indictment criminal information, action at law, or any other mode persons whom they considered to be infringing the rights that they are employed to protect.

3462. (*H. W. Acland, Esq., F.R.S., Regius Professor of Medicine, examined by the Chairman.*) Do you think that the Government should take in hand the management of the whole of the catchment basin of the Thames?—With the best attention that I have been able to bestow on the subject, I really cannot see how, in any river basin whatever, whether it be the Thames or other basins (but I will speak only of the Thames as that with which I am most acquainted), those evils are to be remedied, unless there is a general power of superintending and regulating the course of the waters, and of course a purification of the water.

3472. If I understand you rightly, the first requisite is unity of action throughout the whole of the catchment basin, so that one town should not pollute the water while another town diverts the sewage from the water and yet suffers from the action of the town above?—Certainly.

3503. If I understand you rightly, the conclusion at which you would arrive is this, that the Government should undertake the regulation of the whole of the catchment basin of the Thames, and that the sewage of the towns

should be used for irrigation, and that attention should be given to the breeding of fish in the rivers, in order to purify them?—That would generally express my opinion.

3863. (*T. Taylor, Esq., M.A., Secretary to the Local Government Board, examined by the Chairman.*) Some of the witnesses who have been examined before the Committee have proposed a remedy for that state of things, namely, that the Local Government Act should apply not to individual towns but to a whole watershed or catchment basin; do you think that that would tend to remedy this state of affairs?—I do not think that the Local Government Act is framed for that purpose, and I should doubt extremely if it would be found applicable for such a purpose.

3864. Supposing that it were compulsory to appoint a board which should have authority over the whole catchment basin or watershed, what would be your opinion upon that point?—An Act of Parliament would have to be framed defining the functions of such boards, and giving them powers to execute their functions. They must have different functions, and different powers also, from those of local boards, and it is clear that you must have some authority which would control the whole district which is drained by any great arterial stream, that is to say any one catchment basin or watershed.

3865. Would not the main duty of that board be to keep the river free from pollution?—I should apprehend that that would be their principal duty.

3866. And it would be the duty of some authority, such as the Home Office or the Board of Health, to see that that local board enforced the law with regard to the pollution of that stream, would it not?—When you come to the question of a hierarchy, each degree seeing that the one below does its duty, it is difficult to see where you are to stop. We know that in this country persons are very averse to investing the central authority with powers to control local authorities.

3867. Do you think that if the board were a local authority, and if it were its duty to observe and enforce the law, there would be any control exercised by a central authority if the Home Office were merely to see that the law was administered practically?—I think it comes to be control.

3868. Is it not the case with any other body; the Government really administers the law?—The law courts really see that the law is carried out, and not the executive Government.

3869. Is not the law put in motion by the executive Government?—Not necessarily so; it is generally put in motion by the application of the individual injured, or by the application of corporate bodies.

3870. But should you think that, in this case, it would be insufficient to leave it in the hands of an individual?—I am not aware that I have expressed that opinion.

3871. Have you not stated that it is not the duty of anyone to see that the law is enforced, and that a matter of this great moment should not be left in the hands of one individual, but that there should be some functionary to see that the law is observed; is that your opinion?—I can hardly answer the question by saying yes or no.

3872. Do you consider that some such board ought to be appointed whose duty it should be to see that the rivers are freed from pollution?—If you intend to remedy this evil you must have a body with a very wide area of jurisdiction, but the point as to who is to control that body is of course a further consideration.

3873. Would it not be their duty to see that the law is observed?—They would have to see that the law is observed in that respect, that is to say that the rivers are not polluted.

3874. Supposing that that body do not execute their duties, who is to put the law in motion?—I apprehend that where a positive duty is imposed upon a public body, as the common law at present stands, on any neglect of their duty any person injured by their neglect can apply to the Court of Queen's Bench, which issues a writ of mandamus requiring them to do their duty. You have nothing corresponding to a public prosecutor in this country; in Scotland they have the procurator fiscal, who is charged with the duties of public prosecutor.

3875. Do you think that that would be advisable in England?—I do not give any opinion upon that point; I merely say that we have no such officer.

3876. Supposing that all local objects, such as streets, pleasure grounds, and the like, were still left to the local boards, would not the same powers as are given under the Local Government Act be required for the board of the catchment basin or watershed?—I should rather apprehend that the functions of the board appointed for such a purpose would be to see that the rivers were not polluted. It would not be for them to carry out works to save the river from pollution, but rather to exercise a restraining jurisdiction.

3877. Do you mean that it would be their duty to see that the law was observed, and that they would force the local boards of the towns to carry out the works necessary for such a purpose?—I mean that they should have certain powers over the local boards of towns to restrain them from polluting the rivers.

3907. Do you think that it would be desirable to give such powers to local boards?—You want a more general authority; I mean to say that really to protect the streams you ought to have an authority over the whole watershed or catchment basin.

3935. (*Examined by Mr. Sclater-Booth.*) Passing to the other question that you have raised, as to the advisability of the jurisdiction of a local board extending over a whole valley or catchment basin, would your opinion be that such a local board as that should supersede the smaller boards or should absorb them?—I apprehend that it would be a distinct board altogether, upon which the smaller boards would be represented. I suppose that in order to make such a board effective it ought to include the representatives of the great towns upon the streams and the centres of population, which are in fact polluting the stream, and that it should be either a board composed of delegates from those smaller boards or, where there are not such boards, of persons elected by the owners and ratepayers, so that it should be a board of supervision, so to speak.

3936. In order to give such a board any power or importance, must you not provide it with a power of rating?—Certainly, if it is to take proceedings against offenders; for instance, it would have to take proceedings in chancery, and it would have to set the law in motion.

3937. Do you not think that there would be great clashings and jealousies of interests between such a board as that and the local boards of the towns?—No doubt you would have difficulties in the working.

3938. Would it not be almost as bad, if I may use the expression, as an interference on the part of your office without the advantage of being completely a central authority, so that it would be a tendency towards centralization without such centralization being effective?—If the evil is of sufficient magnitude to require being met, I do not see any other way of meeting it but that.

3958. (*Examined by the Right Hon. W. Cowper.*) If such a board as we have been alluding to were created, is it your opinion that it should extend throughout the whole boundary of the watershed?—I apprehend that to be effectual in its actions that would be necessary, because the pollution of any one of the streams within that area would tend to the pollution of the main stream, and unless you can secure the whole of that area it is useless to purify any part of it.

3959. Would it be necessary for such a board to protect the river against every sort of pollution coming from manufacturers, coming from wanton acts and individuals, as well as from the combined action of the sewerage of the town?—Subject to the principle *De minimis non curat lex*, it would, because many manufactures, for example, cause quite as serious pollutions of streams as local boards do.

3960. Do you think that it would be fair that their rating powers should be exercised over the whole of the watershed districts, or that they should confined to the particular district which is suffering from the nuisance?—I think that you would have to give them powers of dividing their district for rating purposes; they should themselves have some authority to determine their district and rating areas; as a rule I should think their rates would be excessively small, unless in the case of expensive legal proceedings against particular manufacturers or local boards, when their rates might be heavy.

3961. (*Examined by Mr. Bright.*) Would you consider a board such as you speak of to be necessary for London?—London is a case apart, and I should rather not attempt to speak off-hand upon that. We suppose that London, in the next few years will be relieving the Thames from its own sewage at least, and then what London would have to look out for, would be that the towns above it, in the valley of the Thames, did not pollute the river.

3962. (*Cross-examined by the Chairman.*) Did you not give an instance which proved that the local boards had not weight enough; but that, rather than be enforced by injunction to carry out the law, they are themselves crushed by those injunctions?—We have seen the case of a local board being crushed, where they have, not very wisely I think, waived their functions altogether.

3963. Those smaller local boards appear then to be ineffective for the object which you have in view; is not a board of greater weight required for that object?—A board of entirely different construction and different character altogether is required.

3964. There is a difference between your opinion and the opinions which have been given by other witnesses on this point; other witnesses have agreed that there should be a

board for each watershed, but they have said that this board should carry out the necessary works, and that a central authority in London should put them in motion and see that they enforced the law; if I understand you rightly, although you agree with them that there should be a board for each watershed, yet you are of opinion that it should be that board which should see that the law is put in force, and that the local boards should carry out the works; is that the difference between you and the other witnesses?—That is substantially the difference.

4077. (*R. Rawlinson, Esq., examined by the Chairman.*) Did you hear Mr. Taylor's evidence with regard to watershed boards?—Yes.

4078. Are you inclined to give an opinion upon that matter?—I think that if you are to do any good, practically in the prevention or diminution of the present evils you must have some form of action which shall take cognizance of an entire watershed. It is quite clear that you have no organization in existance now, so far as I am aware, in corporations or in local boards, for dealing with anything but their immediate area. You have no machinery for dealing with a watershed as a whole, and therefore to improve any part of that watershed, and to leave the rest to take its course, would be the work of Sisyphus; your work in separate towns would come back upon you.

4079. Do you consider that there must be some unity of action throughout each watershed?—I think so, decidedly; not only as regards the sewage, but for other matters, such as the filling up and fouling of natural streams.

4080. Could that be procured in any other way except by a board whose powers should extend over the whole catchment basin or watershed?—You cannot set up in this country a centralized authority, as in France; it must be effected by some local authority.

4081. It would be, would it not, for that board to see that local boards and towns carried out the works, and prevented the streams from being poisoned?—Yes, and there are many local boards who would do their duty properly, if they had the legal power to do it, and could work simultaneously with the other boards connected with them.

4082. Do you mean that they would at present?—I believe they would, if they had power to intercept the sewage and remove it on to the sites where it could be applied.

4083. What powers do they require for doing it; do you mean powers for going through the lands of other persons?—I think that they would require such powers as a parliamentary committee gives to a railway company.

4084. Do you think that they ought to have compulsory powers to purchase that land?—It would be of very small use for the people of Birmingham to make ten miles of sewage carriers, for instance, into the country if every landowner or every farmer bordering upon said carriers pointblank declined to have anything to do with the sewage.

4085. Then you must give them powers to purchase land to utilize the sewage upon?—In some cases you would be obliged to do so.

4086. Would those be the only powers that would be requisite?—I do not know of any others.

4087. Then, in fact, the change in the law would be very slight, would it not?—Very slight.

(3.) Extract from the Appendix to the Report of the Sewage Committee, 1864.

Remarks by P. H. Holland, M.R.C.S., Medical Inspector, Burial Acts Office.

"I feel very confident of its being possible to reduce the evils to a very small amount, at less cost than the endurance of them entails, but it unfortunately happens that those who would have to bear the cost of the remedy are not always or generally the same persons who suffer losses and inconveniences from the pollution of streams. If however the streams were placed under an effective conservancy, such authority having power effectually to prevent any stream from being unfairly injured, those who now, from idleness, carelessness, or love of saving their own money, even at greater cost to others, would be compelled to study how to carry on their business without injury to others; and experience in other analogous cases shows there is great probability of such injuries being preventible with little trouble or expense, at least with little compared with the injury to be prevented."

(4.) Extract from the Third Annual Report of the Inspectors of Salmon Fisheries, 1864.

"The reason of this failure, especially in rivers of any size,—and it is, of course, the interests of the large rivers that must first be considered—are obvious. The co-operation of all concerned, and an uniformity of management, are necessary in the cultivation of salmon fisheries. Protection is required on different portions of the river at different times of the year, and a good superintendent will know how to distribute his force as the season varies, thus affording the greatest amount of preservation to the fisheries at the smallest expense to the proprietors; and this is of vital importance to success. A salmon fishery must be treated as a farm, if the public at large are to receive any great and permanent benefit; and as extravagantly high farming will not pay, watching, without economy, will soon disappoint the persons who practise it.

"This co-operation cannot be voluntarily obtained; the larger and more valuable the river, the greater the difficulty. Men cannot be brought to see the advantage of spending their money at a hundred miles, or perhaps a greater distance, from their own water. They have never seen the river at that part of it; they do not know the water bailiffs who are employed, or the persons who employ them. The consequence is, the formation of a number of different associations on the same river, giving no assistance to each other, whose interests are mutual and actions, perhaps, opposed. Even a greater difficulty is found in the division, unfortunately sometimes amounting to an hostility of feeling, that prevails between the upper and lower proprietors.

"The lower, tidal, or commercial fisheries, as they may be called, of necessity reap the harvest which the spawning beds of the upper men produce. Naturally, the lower men gather in as much of the crop as they can; and reports of the amount taken, carried upwards and not diminished by the transit, exasperate the fresh-water fishermen, who alone, in nearly every instance, have subscribed the funds by the expenditure of which the fish have been reared. Now the interests of these two bodies are identical. No unfair fishing can be carried on in Montgomeryshire, or in the Bristol Channel, without injury to every fishery on the Severn. It is impossible, however, to induce the very persons who admit this truth to work together when they are locally so far apart, and but too often this community of interest is forgotten or denied. . . . ." (p. 71.)

"These difficulties might be overcome by entrusting the management of the fisheries within each district to a committee, to be appointed by the courts of quarter sessions, under whatever general statutory regulations might be thought necessary; and in cases where rivers flow through two or more counties, the quarter sessions court of each county might nominate so many members to sit on a joint committee, as is now done in cases where there is a common lunatic asylum for two counties." (p. 73.)

"I am convinced by the experience we have now had of the working of that Act, and by the observation I have lately had the opportunity of making of the fisheries of the three kingdoms, that some compulsory means of raising funds, and of producing co-operation between the different interests to be found in salmon rivers, are absolutely indispensable. The present system may work on for a year or two more, but I think its weakness and inadequacy are so generally felt, that if the hope of an amendment in this particular were for long disappointed, most of the existing associations would break down, and the progress now gained would be lost." (p. 74.)

(5.) Extract from the Fourth Annual Report of the Inspectors of Salmon Fisheries, 1865.

"It will be observed that the necessity of an amendment in the present law was everywhere insisted upon, and that, with scarcely an exception, the amendments as proposed were approved. The proposal to entrust the management of the respective rivers to boards of conservators, to be appointed by the quarter sessions of the different counties through which each river may run, was universally accepted. An error in detail was, however, pointed out, and it requires correction. The courts of quarter sessions of counties will be represented in the fishery committees, to whom, where a river flows through two or more counties, the appointment of the conservators is entrusted; but the case of cities which are counties of themselves is not provided for. The cities of Chester and of York, for instance, have great interest in the Dee and the Ouse, and as they exercise in all other respects the privileges of a county, they should have the same powers in the Fishery Acts. The Chester corporation are at the present moment, in virtue of a very ancient Act of Parliament, the conservators of the Dee, and would be superseded by the bill." (p. 23.)

(6.) Extract from the First Report (on the Thames Basin) of the Commissioners on the Pollution of Rivers, 1866.

"The necessary powers should be vested in a body which exercises control over the whole river. Constant local

supervision being indispensable, boards of health might also have concurrent authority for the same purpose, exercisable within their local limits. But it would not be advisable to commit the whole of the powers exclusively to local boards, as some local boards, up to this time, have been the chief offenders. Each town needs to be protected from the abuses of towns above it, and to be prevented from committing abuse towards towns below. The question of sewage pollution of a river is an indivisible one for the whole river basin. Attempts to keep the main stream pure will be vain so long as the tributaries are allowed to remain foul." (p. 18.)

"The land-drains pass directly from the lands into the river above the weir. But it would be otherwise under an improved system of land drainage. The proper method of draining a river valley, according to the opinions of the best qualified persons, is to divide the valley into a series of districts following the course of the river downwards, and to carry the drains of each district into the next district below, so as to give them an outfall into the river at a lower level. Under such a system weirs properly constructed would not interefere with drainage, nor in the aggregate would there be any loss in water power to the river. The river must be dealt with as a whole; else one district might be receiving the water from above without a corresponding right to discharge into the district below, which unfortunate result sometimes happens under the partial operation of the existing Land Drainage Act." (p. 26.)

"These embankments and drainage works should, in our opinion, be carried out, and afterwards be superintended by the body having the government of the whole river; which body should, for the purpose, be invested with all necessary powers; amongst others, power to levy a tax for the construction and maintenance of the works upon the land falling within the limit of their beneficial operation." (p. 28.)

"In our opinion it is necessary that the government of the whole river should be consolidated. Many measures, such as land drainage, embanking, prevention of pollution, are each urgently needed, yet cannot be partially dealt with. They concern the whole river, and require to be carried out under authority according to a system which shall obtain continuously throughout the valley. Again, the various interests connected with the river, navigation, land, mills, water supply can be harmoniously developed, but only by the whole of the river being placed under one management." (p. 31.)

(7.) Extract from the Second Report (on the River Lee) of the Commissioners on the Pollution of Rivers, 1867.

"The Lee exemplifies the evils inevitably entailed by absence of river government. Left without control, towns naturally take advantage of running water to get rid of their sewage, regardless of the fact that the process is simply a transfer of the nuisance from themselves to their neighbours lower down the stream; litigation follows; but litigation, besides being expensive and breeding ill-will, is unsatisfactory. Courts of law are in fact incompetent to deal with the difficulty, and too frequently the party proceeded against may not possess either the legal powers or the pecuniary means to provide by permanent works a good and sufficient remedy." (p. xiv.)

"In the case of both rivers [the Thames and the Lee] the result will be the same; the substitution of a small governing body for a multitudinous collection of nominal governors; and the consolidation, in the hands of a single administration of *all the powers* requisite to be exercised, *for any purpose, throughout the watershed.*" (p. xxiv.)

(8.) Extract from the Third Report (on the Rivers Aire and Calder) of the Commissioners on the Pollution of Rivers, 1867.

"The law as it at present exists is only applicable to local and individual cases. There is no power of general application. One town or one manufacturer may be proceeded against, but there is no authority having the means and the power to deal with nuisances throughout an entire drainage area. We found the law relative to the pollution of these (Yorkshire) rivers to be the subject of general and well-grounded dissatisfaction. Theoretically, the law recognizes that protection is due to public and private rights in running water. It prohibits all public nuisance, and imposes upon each riparian proprietor the obligation of allowing running water to pass on in its course without obstruction or pollution. But a person judging from the present appearance of the streams in the West Riding would infer the contrary to be the law, and would conclude that there existed a general licence to commit every kind of river abuse. . . . If some are permitted to obstruct and pollute the river, it is in vain that others abstain from abusing it. Thus by the maintenance of exceptions the law discourages those who are well disposed, and renders ineffectual voluntary combination, even upon a large scale, amongst manufacturers, to preserve the river." (p. li.)

"However serious the evil, it is very difficult to find a prosecutor, for the principal offenders are the governing bodies of large towns. These do not prosecute one another, for the reason that each is guilty of the same offence towards his neighbour, and they are rarely prosecuted by private persons, because few are willing to bear the expense and odium of acting as public prosecutors. . . . Accordingly, whatever the inconvenience to the public, the nuisance continues unabated. Rich and poor alike submit to it as to a sort of destiny." (p. liii.)

Conclusions. Where manufacturers have been established and a large resident population has grown up, as before stated, the greatest amount of pollution takes place, the area of country over which such form of nuisance is spread having no defined boundary other than the dividing ridges of such watershed and the shores of the sea. In order to prevent the pollution, and legally control the management of rivers, their basins or watersheds must be placed under supervision irrespective of any arbitrary divisions of county, parish, township, parliamentary, municipal, or Local Government Act boundaries, or, indeed, of any artificially established division. Running waters flow on from their source to the sea, and if the upland waters are polluted by town sewage and by refuse discharged from manufactures, as in the West Riding of Yorkshire, the entire length of a river is necessarily polluted, and will require to be conserved or protected. Towns situated midway or on the lower branches of rivers, as Leeds, Manchester, Salford, and many other places, will establish and carry out local improvements, and would clarify their sewage and other refuse fluid to little practical purpose, if the towns, villages, and manufactories on the same river with themselves and its tributaries are not placed under restrictions against sending down pollutions. This state of things applies equally to villages and even to single mills and factories as to large towns; it prevents local authorities, as also manufacturers, from taking up the question of separate purification. Thus, for instance, the corporation of Salford, which occupies one side of the river Irwell opposite Manchester, entertained the idea of intercepting sewers. Plans were prepared and estimates made, and the project was discussed, but was abandoned on the plea that money expended in Salford alone on such works would not accomplish the purification of the river Irwell so long as Manchester and all the great manufacturing towns and mills of Lancashire, situated on the river and its tributaries, continued to pollute the running waters of their respective districts. . . . . One conclusion, therefore, forces itself upon anyone who honestly deliberates upon the existing state of things in regard to the rivers we have visited with a view to its permanent improvement. A stronger power than has hitherto been available must be brought to bear if the present abuse and pollution of streams is to be arrested, and government supervision and inspection must enforce and strengthen the action of local authorities.

(9.) Extract from the Evidence on the Thames Navigation Bill, 1866.

1858. (*S. W. Leach, Esq., examined.*) Might it not suit your purpose as well if, between Ensham Bridge and Lechlade, there should be drainage areas under the control of an engineer appointed for that purpose, whose duty it would be to use the river both as a receptacle and as a carrier of the drainage of the district?—Such areas might be formed, but I think even then it might be desirable to have a controlling power over them, because it would not follow that they would be acting in accord with one another.

1864. Would it not be possible on the part of the conservancy when any such bill as this was introduced, to get proper clauses put in to protect the water as regards the conservators?—That would of course be necessary, but I still think that a general control over the whole would be advantageous.

1865. You see that by the present bill the whole of the Thames, from Lechlade to Staines, is to be handed over?—Yes.

1866. According to your view now, you think that there ought to be different regulations above and below Oxford?—Not different regulations; I say that in my opinion the conservators ought to have the control over the whole.

2046. Is it not desirable, therefore, that if we should embark in any large scheme for improving the basin of the Thames, that those affluents should also be brought under control as well as the main river?—Certainly, with regard to the main stream.

2753. (*R. Rawlinson, Esq., C.B., examined.*) Have you considered whether it is very desirable that there should be unity of management throughout the whole of the river, beginning at Cricklade downwards?—I am opinion that it is quite necessary to the due and proper management of the river that there should be one jurisdiction over the entire river, from Cricklade down to the boundary of the City conservancy; and I will go further and say that, in my opinion, it would be a more complete bill if it took jurisdiction over the entire basin of the Thames, including its tributaries; that is my opinion.

2756. You are clearly of opinion that it would be a pernicious thing now to set up an authority for the part of the river above Oxford distinct from that which would have the control over the river immediately below Oxford?—I am satisfied it would; you would have two separate boards, you would have two separate sets of paid officers, and you would have that divided action which is always a disadvantage where a thing can be looked after by one and the same.

2757. The works of the river below Oxford might greatly affect the river above Oxford, might they not?—No; the works above Oxford might affect the river below Oxford.

2758. I was going to take it in both ways; the absence of works on the river below Oxford might greatly affect the river above Oxford; for instance, the works below Oxford might keep the water up?—Yes: and if the river is to be made navigable, the defective works below Oxford, or improper works, might affect the river above Oxford.

2759. And, *vice versâ*, the works constructed above Oxford might have a most injurious effect, or, on the other hand, might have the most beneficial effect on the river below Oxford; is that not so?—It is.

2760. If that is so, would it not be very desirable that there should be one constituted authority for the execution of these works, both above and below?—It would.

2992. May I gather from that that you consider it almost impossible, with regard to the upper part of the river, so far as jurisdiction is concerned, to prevent the pollution by sewage?—In my opinion there ought to be jurisdiction over the entire water of the Thames, to prevent pollution, even beyond what is at present contemplated by this bill; I think that it should take in not only the main river but its tributaries.

2996. Then, not wishing to repeat unnecessarily the evidence which you have been giving, of course that would be conclusive proof that your opinion is that there should be unity of management through the whole?—That is my opinion.

2999. I mean that the parties who have the control of the lower part should have the power of seeing that the control of the upper part assimilates with their system; so that the unity of management for the entire river which you think so desirable should be preserved?—Yes; that the conservancy board should be so constituted as to represent the lower and the upper part in some way, and have jurisdiction over the area placed under them.

3000. There would then be one area from the mouth of the Thames to the source of the Thames, and one system of management?—Yes.

3001. That you think desirable?—I do think it desirable.

3012. I see that in page 18 of your report you say, with regard to the sewage question, "The necessary powers "should be vested in that body which exercises control "over the whole river; constant local supervision being "indispensable, boards of health might also have con- "current authority for the same purpose exercisable within "their local limits;" do you still adhere to that opinion?—Yes.

3015. Are you of opinion that some of the local authorities are chief offenders?—Yes; and if the Committee will allow me, I will give my reason for that, which may have some weight hereafter; I wish to show the Committee how it is that the local boards require some outside authority to enable them to do that which is necessary, for the knowledge of the local board is powerless to act for the benefit of the community if there is an ignorant opposing ratepaying interest outside of them; the town councils and the local boards, who have already been compelled to resort to proper means of purifying sewage, and to do necessary works for the purpose of purifying the sewage irrigation, so far as my knowledge goes, have been forced by an outside legal authority; the majority of the boards have quite sufficient intelligence to know that they must do it, but they were powerless to do it because of the ratepaying interest.

3260. (*J. T. Harrison, Esq., examined.*) Are you of opinion that there ought to be any control over the placing of obstructions of that kind?—From the evidence we received and from inspection of the land, I have not the slightest doubt of the necessity of giving power to the conservators (who have the control over the river), the power of drainage, and they should be able to carry out the works for the prevention of the flooding of the adjoining land such as are carried out under the Drainage Act.

3261. Do you think it important that the conservators should have the control of the direction which each catchwater drains or lateral drains would take, and the points at which the outfall should enter the river?—I think it would be very desirable.

3262. Do you think that it would prevent opposition among the landowners?—I think it would be so greatly to their interest that they would offer no objection.

3264. Do you think the evils of which we have heard so much here, about Oxford, could be remedied if the conservancy board had only the control of the main channel, without having any control of the side or lateral channels too?—Certainly not.

(p. 345) The *Chairman (the Right Hon. T. Milner Gibson)* stated that the Committee had agreed to the following resolutions:—

1. That the upper navigation commissioners should be discontinued.

2. That there should be one governing body for the Thames above and below Staines.

3. That the governing body should be the conservators of the river Thames, with a modification of their constitution.

4. That above Staines, the conservators should have the like powers as they have below Staines, and also the powers now belonging to the upper navigation commissioners.

APPENDIX II.

DOCUMENTS TENDERED BY WITNESSES.

(1.) Suggestions for Amendment of the Local Government Act and Sanitary Act, (Tom Taylor, Esq.)

See Question 336.

(N.B. This includes only matters of primary importance.)

A. As to Local Government Act.

Orders as to Costs of Adoption.

When the Local Government Act is adopted the Secretary of State shall have power to make order as to the payment of costs incurred prior to and for the purpose of the adoption of the Act, and may order the taxation of such costs by Her Majesty's Treasury, and may to such amount as he thinks reasonable order the payment of such costs when so taxed out of the rates levied under the Local Government Act.

Alteration of Number of Local Boards, or Division or Alteration of Wards.

Where in any district in which the Local Government Act is in force, or in any corporate borough, it shall appear to one-tenth at least in number or value of the owners and ratepayers in such district or borough, that the number of the local boards should be altered, or that the said district should be divided into wards, or that alteration should be made in the number of wards into which the said district is divided for the purposes of the Municipal Corporations Act or the Local Government Act, or in the number of wards, or of aldermen or councillors of any corporate borough, it shall be lawful for them to address a petition to one of Her Majesty's Principal Secretaries of State praying for such division or alteration.

Such petition shall be signed by at least one-tenth in number of the owners of property in, and ratepayers paying

rates in the district, or the owners and ratepayers in respect of one-tenth of the property rated in the district respectively, or either of them. Such owners and ratepayers being reckoned together in computing such tenth in number or value.

On the receipt of such petition the Secretary of State may direct inquiry. Fourteen day's notice of the time, place, and subject of the inquiry shall be given in the place to which it refers, in the same places and the same manner in which public notices are usually given.

The Secretary of State may, after such inquiry, dismiss such petition, or may prepare a provisional order in relation to the subject matter thereof, and either make such division, increase, annexation or alteration as prayed in the said petition, or make such other provision, in relation thereto as he may think expedient.

And shall take all necessary steps for confirmation of the said provisional order by Parliament, along with and in the same manner, and subject to the same conditions in all respects as Provisional Orders under the 77th section of the Local Government Act. When alteration is made by such Provisional Order as aforesaid, in the wards, or number of the aldermen or councillors of any municipal borough, the alteration shall apply to and effect the election of the members of the town council of the said municipal borough, as if the alteration had been made under and in pursuance of the Acts relating to municipal corporation.

[N.B. This is much urged as necessary for the purposes of the Municipal Corporations Act as of the Local Government Acts, and is so framed, but of course the matter is as much one for amendment of the Municipal Corporations Act as of the Local Government Act.]

As to Byelaws.

Byelaws made by local boards for the closing of buildings and part of buildings unfit for human habitation, and for the prohibition of their use for human habitation, shall, notwithstanding anything in the Local Government Act, 1858, extend and apply to buildings erected before the constitution of the district.

Byelaws in the form contained in the schedule of this Act shall be, and the same are hereby declared to be binding and of legal effect, as if the same were enacted in this Act, and may be adopted in the manner prescribed for the adoption of byelaws by the Public Health Act, 1848, in which or in part by local boards, and the legal validity of the same shall not be impaired by the filling up with any figures of the blanks in the same, provided such figures are confirmed by one of Her Majesty's principal Secretaries of State, as required by the Public Health Act, 1848.

Roads converted into streets may be dealt with under 69th Section of the Public Health Act, 1848.

When a road which at the date of the constitution of the district is not a street having houses abutting on it, whether such houses be contiguous or separate from each other is converted or in process of conversion into a street with houses as aforesaid abutting thereon, so as to render it necessary for the convenience of dwellers in such houses and persons resorting thereto, to provide such a roadway and sidewalks, and such curbing, flagging, channelling, and sewering, or any of those things as are required for public use and convenience in such a street as aforesaid, but not in a road not being such a street as aforesaid, the first cost of providing such roadway, sidewalks, curbing, flagging, channelling, or sewering as aforesaid, as may be rendered necessary by or in the course of conversion of a road into a street as aforesaid, may be defrayed in the manner provided by the 69th section of the Public Health Act, 1848, as if such road had not been a highway repairable at the public expense.

Prohibiting erection of Houses on existing lines of Road at less distance from centre of Road than half the breadth prescribed for carriageways by the Byelaws of the Local Board.

When a road (certified to be) in course of conversion into a street as aforesaid is narrower than the breadth prescribed for streets being carriageways in the byelaws of the local board, it shall not be lawful for persons erecting houses or buildings on either side of the same to erect such houses at a distance which will leave less than one-half the breadth prescribed for streets being carriageways as aforesaid, from the centre of the said road, and all plans of such houses or buildings which do not show such a distance as aforesaid from the centre of the road may be rejected by the local board.

And any person erecting houses or buildings at less than such distance shall be liable to the same penalties, and to the taking down and removal of such building as if such houses and buildings were in violation of the building byelaws of the said local board.

Purchase of Lands for Waterworks.

The powers and provisions of the 75th section of the Local Government Act shall extend to the purchase of lands and rights which the local board may require to purchase, without their district, for the purposes of water supply.

Penalty for bringing forward Houses.

When any house or building is brought forward without consent of the local board, contrary to the 28th section of the Local Government Act Amendment Act, 1861, the person by or under whose direction it is so brought forward shall be liable to a penalty not exceeding 5*l.* for every day such house or building is allowed to continue so brought forward.

Loans for the Purchase of Lands or Buildings.

When a local board raise money for the purchase of lands or tenements, or for the construction of permanent works or buildings, they may do so, on the security of such lands, tenements, works, or buildings, instead of the security of rates and charges leviable by them; or they may give the security of such lands, tenements, works, or buildings, in addition to the security of such rates and charges.

Monies borrowed for purchasing Lands, &c. repayable in 50 years.

Monies required for the purchase of lands and tenements may be borrowed for such period not exceeding 50 years, as the local board, with the sanction of one of Her Majesty's Principal Secretaries of State shall in each case determine. And any local board that has already borrowed monies for such purchase as aforesaid may, with the consent of the lenders or mortgagees having advanced the same, and with the sanction of one of Her Majesty's Principal Secretaries of State, reborrow the portion of such loan still due and unpaid for such term, not exceeding 50 years from the date of the original borrowing, as may be sanctioned by one of Her Majesty's Principal Secretaries of State.

Adding amount of Expenditure under recent Acts, to amount authorized by Local Act.

When by any local Act rates for purposes of local improvement are limited to a sum named or fixed by the Act, and new duties, involving the expenditure of monies in the payment of officers, the execution of works or otherwise, are imposed on the commissioners or trustees administering such local Acts, by any general Act passed after the passing of such local Acts, it shall be lawful for the said commissioners or trustees to add the expenditure so incurred to the amount they are entitled to raise under such local Act.

Power to close Foul Wells.

Local boards and sewer authorities, and all other local authorities having powers of water supply, shall, on the certificate of any medical officer of health or of two medical practitioners or an order of one of Her Majesty's Principal Secretaries of State, made after local inquiry and report, have power to fill up wells or to remove or otherwise render useless as the case may require, pumps and other sources for the supply of water so foul or so polluted as to be injurious to health.

Compensation.

When any question of compensation arises in which a local board or any other local authority for the purposes of the Sanitary Act and the Sewage Utilization Acts has to proceed to arbitration, the costs of and incident to such arbitration and award shall, if either party so require, be settled by one of the masters of the Court of Queen's Bench, in the same way as the (now so taxable under the 30 & 31 Vict. c. 117) costs of and incidental to arbitrations arising in relation to the purchase of lands by railway companies.

Incorporating Powers of Waterworks Clauses Act, when Local Boards supply Water.

When local boards or sewer authorities supply water to their districts under the powers of the Local Government Act, 1858, or the Sanitary Act, 1866, there shall be incorporated with the said Local Government Act, 1858, or the said Sanitary Act, certain portions of the Waterworks Clauses Act, to wit, the sections of the said Act with respect to the construction of waterworks, numbered 7, 8, 9, 10, 11, 12, 13, 14, and 15 (in so far as the said sections relate to England), and the sections with respect to mines in so far as the same relate to England.

And when the local board or sewer authorities have not the control and superintendence of streets, the sections with respect to the breaking up of streets for the purpose of laying pipes; and the sections with respect to the supply of water to be furnished by the undertakers, except so much thereof as relates to agreement between the town commissioners and undertakers, or requires, or requests of

town commissioners to the said undertakers, or as imposes any penalty or forfeiture to the said town commissioners.

And the sections with respect to the communication pipes to be laid by the undertakers, and the section with respect to the communication pipes to be laid by the inhabitants.

And the sections with respect to the waste or misuse of water to be supplied by the undertakers.

And the sections with respect to the payment and recovery of water rates.

And the sections of the Waterworks Clauses Act, 1863, with respect to the security of reservoirs.

And the sections of the same Act with respect to the supply of water to be furnished by the undertakers.

And the sections of the same Act with respect to the waste or misuse of the water supplied by, or belonging to the undertakers.

When local boards provide or maintain landing-places, piers, esplanade, public walks, pleasure or recreation grounds, they may make byelaws for the proper regulation of the same, and for maintaining order and decency therein and may by such byelaws charge tolls for admission to any landing-place, pier, esplanade, public walk, or pleasure, or recreation ground so provided or maintained by them.

To extend operation of 24 & 25 Vict. c. 61. to 50l., and to allow proceedings for recovery of penalties to be taken in County Courts.

Local boards shall have the same power to take proceedings in the county courts for the recovery of demands up to 50*l.*, as they have now for the recovery of demands below 20*l.*, and may also take proceedings for the recovery of penalties before such courts.

Consents.

When a provisional order has been made for the separation of any part of a district, or for the incorporation with any district of any parish, township, hamlet or place maintaining its own roads or its own poor, or any portion of such parish, township, hamlet or place, owners as well as ratepayers shall be summoned and allowed to vote at meetings for the consents required by the 77th section of the Local Government Act to be given to such provisional order, and at such meetings if a poll be demanded it shall be taken in the same way, and the voting shall be on the same scale as on resolutions for adoption of the Local Government Act.

Smoke.

Where in proceedings against any person for a nuisance arising from the use of a fireplace or furnace sending forth black smoke, it is proved that the fireplace or furnace from which such black smoke proceeds is so constructed or is furnished with such appliances as to consume all smoke arising therefrom as far as practicable, having regard to the nature of the manufacture or trade in which it is used, and that the issue of black smoke is caused by the act or default of the stoker or person in charge of such fireplace or furnace, it shall be lawful for the justices to inflict on such person a penalty not exceeding for such act or default.

B. As to the Sanitary Act.

Appeals under the Sanitary Act, and as to the parties by whom the costs of the same are to be borne.

That the Secretary of State shall have the same power to make order as to the costs of inquiries and appeals under the Sanitary Act, and as to the parties by whom the same are to be borne, as he now has with regard to costs of inquiries and appeals under the Local Government Act.

That the notice convening the sewer authority of a special drainage district may be signed by the incumbent of any church or chapel in the special drainage district, or in any parish of which part is included in the special drainage district, and posted on the door of such church or chapel on which public notices are usually affixed.

That the Secretary of State shall have power to borrow at interest the amount required to meet the first cost of works to be done by any person appointed by him under the 49th section.

That whenever a resolution forming a special drainage district is passed by the vestry, a copy of such resolution shall be forwarded to one of Her Majesty's Principal Secretaries of State, and no such resolution shall be valid without the sanction of such Secretary of State, to be published in the "London Gazette" in the same manner as orders of the Secretary of State settling boundaries under and for the purposes of the Local Government Act, 1858.

That the accounts of every vestry, or committee thereof acting as a sewer authority, shall be subject to audit by the poor law auditor for the district in which such parish or special drainage district is situate, in the same manner in all respects, and subject to the same appeal, as accounts under the Acts relating to the relief of the poor.

The fourth and fifth sections of the Sanitary Act, 1868, shall be repealed, and in lieu thereof be it enacted, that:

When a sewer authority petition the Secretary of State to be allowed to exercise the powers conferred by the 51st and 54th sections of the Public Heath Act, 1848, as amended by any subsequent Act of Parliament, and of the 31st section of the Local Government Act, 1858, or the powers for the cleansing, sewering, levelling, paving, flagging, and channelling of streets, as are vested in local boards by the Local Government Act, 1858, and for the better execution of such powers, to be constituted the nuisance authority of their district, the Secretary of State may direct inquiry into the subject-matter of such petition, and may either dismiss the same or may make order, to be published in the London Gazette, vesting in the said sewer authority the powers for which they have petitioned, or such of them as he conceives may be usefully vested in such authority. And from and after the date of such order, or from a date to be mentioned therein, the jurisdiction of the nuisance authority within which the petitioning district is situate shall cease in and for such district, and the sewer authority of such district shall be the nuisance authority in and for the same, and shall have all the powers and discharge all the duties of such nuisance authority, and the expenses of executing the said powers and duties shall be defrayed as part of the costs of executing the Sanitary and Sewage Utilization Acts in such district.

That the Secretary of State shall have power after inquiry made in the manner directed by the Local Government Act for inquiries preliminary to provisional orders, to make a provisional order for the combination of districts for the purposes of the Local Government Act or Sanitary Act. And all the provisions relative to the confirmation of provisional orders under the Local Government Act, 1858, shall extend and apply to provisional orders under this section.

(2.) Memorandum on the Repayment of Expenses incurred under the Local Government Act and the Sanitary and Sewage Utilization Acts, (Arnold Taylor, Esq.)

See Question 1131.

The following Memorandum has been drawn up in view of the necessity which recent sanitary legislation involves for the increase of the staff and office expenses of this department. And it proposes to show that no hardship will be caused if nearly the whole cost of the Local Government Act Office be made repayable, as it is now in a very limited and unequal degree, and if the office were to cease to be a burden on the Government, the greater part of its expenses being transferred to the localities benefited by it labours, in fair proportion to the amount of work done for such district. The following statement shows the whole cost of the working of the Local Government Act, and since 1865, that of the Sewage and Sanitary Acts:

August 1865 to August	1866	-	£5,898	3	2
„ 1866	„	1867	-	5,536	7	8
„ 1867	„	1868	-	6,075	18	8

The month of August is taken as a beginning because the annual returns of the work done in the office begin and end in that month. The following were the travelling and personal expenses of the inspectors of this office for the corresponding period:

August 1865 to July 31st	1866	-	£631	5	7
„ 1866	„	1867	-	460	7	4
„ 1867	„	1868	-	586	8	5

or speaking roughly, about 10 per cent. of the total cost of the office.

Now, the work done here embraces a great variety of subjects. First, the granting of provisional orders; next, adoptions or settlement of boundaries of districts under the Local Government Act; third, examination, and when needful, visits paid to districts by the inspectors before the recommendation of loan sanction; fourth, appeals of various kinds, with reference to the legality of adoption of the Act, auditor's surcharges, the confirmation of byelaws, and generally in respect to disputed questions relating to all sorts of sanitary matters and regulations affecting local board districts, and the ratepayers resident within them. The 10 annexed annual reports (the eighth, and ninth, and tenth not yet being printed), show in detail the nature and extent of the work done in the office.

In addition, however, to the administration of the Local Government Act, there has been entrusted to this office since 1865 the working of the four Sewage and Sanitary Acts, which were passed in 1865–66–67 and 68 respectively.

Under these Acts business is transacted of a kind almost as various as that under the Local Government Act, whilst the charges incurred for travelling and personal expenses by the inspectors are of course the same. As to extent of work, that under the Sanitary Acts often involves more time, labour, and trouble than business under the Local Government Act, inasmuch as, under the former Acts, the Secretary of State is petitioned and empowered to put in force his compulsory powers, over local authorities in default.

By section 27 of the Local Government Amendment Act, 1861, the costs incurred in respect to all provisional order cases are made repayable by the district to which the order may relate, and a similar practice exists with reference to all inquiries connected with adoptions of, or settlements of boundaries under the Local Government Act. But even in these two classes of inquiries nothing is ever charged to a district except the inspector's personal and travelling expenses; whilst in all other cases not one sixpence is charged, although the districts are having substantial and exclusive service rendered them by the staff of this office.

Under the Sanitary and Sewage Acts, probably by an oversight of the Legislature, no expenses whatever are repayable, although under these Acts inquiries may and do take place with respect to provisional orders, boundaries, and the like, the cost of which are, as has been stated partially at least repayable under the Local Government Act.

The following table shows the amount of such repayments in the last three years:

	Repayments.				
1865–1866. Provisional order cases	£ 164	s. 15	d. 4		
„ „ Boundaries and adoption	74	13	11		
				239	9 3
1866–1867. Provisional order cases	129	6	1		
„ „ Boundaries and adoption	83	9	9		
				212	15 10
1867–1868. Provisional order cases	206	6	3		
„ „ Boundaries and adoption	42	10	4		
				248	16 7
Or in all receivable in the three years				£701	1 8

The total personal and travelling expenses for the same period having been as has been stated 1678*l.* 1*s.* 4*d.* It must be noted that no part of the time, either of the staff or inspectors of the office, is charged even in those few cases, where travelling and personal expenses are held to be repayable. Now salaries form a far heavier item in the annual charges than travelling or personal expenses, and every inquiry involves work to the whole of the office in some shape or way, as well as to the inspector who may be sent down to the locality. Hence the so-called repayable expenses form a most inadequately small portion of what every district ought to pay:—

First. To take the provisional order cases, by means of which a local board, at a present cost of 7*l.* or 10*l.*, or less, obtains what is as useful to them as a Local Improvement Act, which would cost them anything from 500*l.* to 2,000*l.* In each of these cases the local board has to do nothing more then present its petition for provisional order, after which the whole trouble and responsibility of drawing the order, and ensuring its passage through Parliament in one of the Local Government Act confirming bills is, unless the order be opposed, discharged for the district by this office.

Between 1865 and 1868 the number of provisional order cases, was as under:

1865–1866, 39 Provisional orders confirmed.
1866–1867, 35 „ „ „
1867–1868, 39 „ „ „

The following is an approximate estimate of the actual average cost to this office of a provisional order case, say:

	£	s.	d.	£	s.	d.
Secretary's time, 2 days at	5	5	0	10	10	0
Inspector's „ 6 „	3	3	0	18	18	0
Clerk's „ 5 „	1	1	0	5	5	0
Inspector's travelling and personal expenses				6	6	0
Incidental and office expenses (say)				4	1	0
Total				£45	0	0

Certainly no local board district could refuse to pay such a trifling amount as this, when it is considered what is the value given in return for it.

And the demand of some larger sum than that now levied, would have an useful influence in deterring districts from asking for provisional orders to effect very trifling objects, as is now sometimes done.

Independent of provisional order cases there were, in

1865–66, 45 inquiries on miscellaneous subjects.
1866–67, 21 „ „ „
„ 21 under Sanitary and Sewage Acts.
1867–68, 37 „ „ „ „
„ 16 under Local Government Act upon miscellaneous subjects.

Only a very approximate estimate can be made of the cost of these inquiries, varying as they do, in their objects and importance, and in the amount of time and trouble spent upon them. But the following is about a fair average:

	£	s.	d.	£	s.	d.
Secretary 1 day	5	5	0	5	5	0
Inspector 5 „	3	3	0	15	15	0
Clerks 1 „	1	1	0	1	1	0
Inspector's travelling and personal expenses				1	6	0
Office charges and incidentals				1	13	0
Total				£30	0	0

One of the most important services rendered by this office to the many districts in which the Local Government Act has been adopted, consists in the inspection and checking of the plans, reports, and estimates, which every local board is obliged to furnish before it can receive the Secretary of State's sanction to any loan which they may propose to raise for defraying the cost of improvement works. Hence every application for sanction represents a separate report by an inspector, and frequently a visit by him to the district, as well as a certain amount of clerk's work in the office, a formal document having, in each case, to be prepared for the signature of the Home Secretary, and a duplicate of it retained here for reference.

A per-centage charge cannot be imposed upon loan sanction applications, because the time spent on the work is often in an increase ratio to the amount of the loan to be raised. But on an average, 10*l.* 10*s.* 0*d.* may be taken as a fair charge.

The following is a summary of this branch of the office work during the last three years:

		£	£
1865–66.	136 sanctions under Local Government Act	870,355	
„	2 „ „ Sewage Act	2,450	
			872,805
1866–67.	10 „ „ Sanitary and Sewage Acts	24,000	
„	146 „ „ Local Government Act	668,488	
			692,488
1867–68.	142 „ „ „ „ „	588,394	
„	23 „ „ Sanitary and Sewage Acts	35,028	
			623,422
	Total for three years		£2,188,715

There is finally the work connected with the scrutiny and revision of the byelaws and lodging-house regulations which have to be sent here for careful examination and consideration, and occasionally for inquiry by an inspector in the district, before they are submitted to the Secretary of State for confirmation.

1865–66. 95 sets of byelaws were submitted and examined.
1866–67. 101 „ „ „ „
„ 17 „ „ „ „ lodging-house regulations.
1867–68. 28 „ „ „ „ „
„ 171 „ „ „ „ „

It is considered the 5*l.* 5*s.* 0*d.* would be a very moderate charge to place upon each of these.

The following summary shows the amounts that would have been paid back to the Treasury in the past three years, had the above-mentioned scales of charges been levied on each class of work specified:—

		£ s. d.	£ s.	
1865–66.	39 Provisional order cases at	45 0 0	1,755 0	
„	45 miscellaneous inquiries	30 0 0	1,350 0	
„	138 sanctions to loans	10 10 0	1,449 0	
„	95 sets of byelaws approved	5 5 0	498 15	
				£5,052
1856–67.	35 provisional order cases at	45 0 0	1,575 0	
„	42 miscellaneous inquiries	30 0 0	1,260 0	
„	156 sanctions to loans	10 10 0	1,638 0	
„	101 sets byelaws approved	5 5 0	530 5	
„	17 „ lodging-house regulations		89 5	
				5,092
1867–68.	39 Provisional order cases at	45 0 0	1,755 0	
„	53 miscellaneous inquiries	30 0 0	1,590 0	
„	165 sanctions to loans	10 10 0	1,732 10	
„	171 sets of byelaws at	5 5 0	897 15	
„	28 „ lodging-house regulations		147 0	
				6,122
	Total for three years			16,266

The total cost of the office having, as already stated, amounted during the same time to £17,510

There are certain minor charges and expenses coming on this office, such, for example, as the analyses of water samples at the Government laboratory, for which nothing is at present charged to those districts which send the water.

But the foregoing summary will show the principle sought to be established, that work done should be paid for by those for whom it is done.

The cost of this office is but small, still if such a principle could once be established and successfully worked here, it is obvious that it might be extended to many other Government departments which have to supervise, inspect, or control particular localities and interests, exclusively for the benefit of the ratepayers of these localities.

(Signed) A. Taylor.

Local Government Act Office,
November 19th, 1869

Amount of Loans sanctioned by the Secretary of State under the Local Government Act, 1858; the Sewage Utilization Acts, 1865 and 1867; the Sanitary Acts, 1866 and 1868.

		£ s. d.
1st Sept. 1858 to 12th Augt. 1859	Under Local Government Act	260,905 13 0
12th Augt. 1859 to 21st Augt. 1860	„ „ „	280,259 7 4
21st Augt. 1860 to 1st Augt. 1861	„ „ „	356,192 0 0
1st Augt. 1861 to 1st Augt. 1862	„ „ „	314,568 5 6
1st Augt. 1862 to 27th July 1863	„ „ „	236,892 0 0
27th July 1863 to 28th July 1864	„ „ „	496,603 6 0
28th July 1864 to 28th July 1865	„ „ „	538,446 10 10
28th July 1865 to 1st Augt. 1866	„ „ „	870,355 10 0
„ „ „	„ Sewage Utilization Act	2,450 0 0
1st Augt. 1866 to 1st Augt. 1867	„ Local Government Act	668,488 8 0
„ „ „	„ Sanitary and Sewage Acts	24,000 0 0
1st Augt. 1867 to 1st Augt. 1868	„ Local Government Act	588,394 0 0
	„ Sanitary and Sewage Acts	35,028 0 0
		4,672,583 0 8
Amount of loans sanctioned by the General Board of Health under the Public Health Act, 1848, from 1st June 1850 to 1st September 1858.		2,956,178 6 8
	Total	£7,628,761 7 4

(3.) Queries issued by the Public Works Loan Commissioners to Applicants for a Loan, (Wm. W. Willink, Esq.)

See Questions 1606–1608.

Public Works Loan Office,
3, Bank Buildings, London, E.C.,
1869.

(A.)

To the Local Board, or Local Board of Health.

1.

When was the local board constituted, and in what manner?

A copy of the order, advertisements, or other evidence of the due constitution of the board should be forwarded, and also a plan of the district.

2.

What are the limits of the district of the local board, and has the same been subdivided, and how, and by what order?

3.

Has one of Her Majesty's Secretaries of State authorized the local board to borrow any and what sum or sums of money, irrespective of the loan now required, and for what purpose or purposes?

4.

What amount has been borrowed, whether under such authority or otherwise; for what purposes and from whom, and how much has been repaid, and from what sources and at what times?

5.

What securities have been granted for the amount so borrowed? and at what rate of interest? and how is the repayment of the principal monies stipulated to be made?

6.

Was the Public Health Act in force, wholly or partially, within the district on the 2d August 1858, the day on which the Local Government Act was passed?

7.

What sum is required by way of loan from the Public Works Loan Commissioners?

A copy of the resolution of the local board to provide the works, and to apply for the loan should be furnished.

8.

Under what Act and section is the loan applied for authorized to be borrowed, and has the Secretary of State sanctioned the borrowing?

If yea, forward a copy thereof.

9.

By what instalments and at what times is such loan required to be advanced?

10.

For what purpose or purposes is the loan required, and under what Act and section are the works authorized?

Describe the works executed, in progress, and projected.

11.

Are there any and what waterworks companies established for supplying water within the limits in which the local board is desirous of supplying or laying on water? If yea, evidence must be furnished that every such company is unable or unwilling to lay on water for the purposes proposed by the local board in terms of the 75th section of the Public Health Act, 1848.

12.

Are any lands or premises required to be purchased for the proposed works? If yea, have such lands and premises been purchased and paid for, and are there any and what charges or incumbrances affecting same?

13.

Are the expenses in aid of which the loan is required for works of a permanent nature, and how is this evidenced?

14.

If any of the works have been executed, a detailed statement showing the expense thereof should be furnished.

15.

Has any and what part of the money so sanctioned been borrowed, and what security has been given for same?

16.

Have any and what contracts been entered into for the execution of the works, or has any tender been made in relation thereto, and state what notices were given?

17.

What security was taken for the due performance of each contract, and was such security deemed sufficient?

18.

If no contract has been entered into or tender made, what is the estimated cost of the proposed works? Full details must be furnished.

19.

Is any and what property in any part of the district exempted from general district rates?

20.

What amount of annual rates is estimated to be necessary to repay the principal and interest charged and proposed to be charged upon the property assessable thereto for the works, and how is such estimate formed

21.

Have any and what general district rates been made during the past year, what sums have been received in respect thereof, and how have the monies received been expended?

22.

Will all the persons proposed to be rated derive some direct benefit from the works for the expense of which they are liable to be assessed?

23.

What security is proposed to be given for repayment of the loan applied for if granted, with interest at 5*l.* per cent. per annum on the principal from time to time remaining unpaid?

24.

By what annual or other instalments, not exceeding 20, (*vide* Act 16 & 17 Vict. cap. 40. sec. 1, Public Works Loan Act, 1853,) is it proposed to repay such loan if granted, or the several advances thereof with interest thereon?

25.

What is the annual value of the property assesed to the poor rates in the district and division of the district?

26.

What is the population of the district, and division if subdivided?

27.

Have all the requirements, provisions, and regulations of "The Local Government Act, 1858," and the Acts incorporated therewith, been strictly complied with by the local board?

N.B.—The answers to the foregoing queries must be written on this paper, and verified by statutory declaration in the form attached, to be made before a magistrate.

I,
do solemnly and sincerely declare that the answers to the queries hereunto annexed and numbered 1 to , both numbers inclusive, are true and just to the best of my knowledge, information, and belief. And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of an Act made and passed in the Session of Parliament of the fifth and sixth years of the reign of His late Majesty King William IV., intituled "An Act to repeal an Act of the "present Session of Parliament, intituled 'An Act for the "more effectual abolition of oaths and affirmations taken "and made in various departments of the State, and to "substitute declarations in lieu thereof, and for the more "entire suppression of voluntary and extra-judicial oaths "and affidavits, and to make other provisions for the "abolition of unnecessary oaths.'"

Subscribed and declared at
this day of 18

(B.)

Public Works Loan Office,
3, Bank Buildings, London, E.C.,
1869.

To the Sewer Authority for the parish of in the county of , acting under the Sewage Utilization Act, 1865, the Sanitary Act, 1866, the Sewage Utilization Act, 1867, and the Sanitary Act, 1868.

1.

Who are the sewer authority for the parish of , and how constituted? Refer to Act and section.

2.

Did the sewer authority at a meeting specially convened form any committee under Section 4 of the Sanitary Act, 1866? If yea, forward a copy of the notice convening the meeting, and of the proceedings thereat.

3.

Has any part of the parish been formed into a special drainage district under the Sanitary Act, 1866? If yea, forward copy of the notice convening the meeting, and the resolution passed thereat; if under the Sewage Utilization Act, 1867, furnish copy of the order of the Secretary of State. Also a plan of the district.

4.

Was a copy of such resolution or order published and advertised as required by section 7 of the Sanitary Act, 1866? If yea, furnish a print of the newspaper containing the advertisement, or a certificate, as mentioned in the same section.

5.

Was there any appeal against the formation of the district? If yea, furnish copies of the order of the Secretary of State thereon.

6.

Have the sewer authority borrowed any and what sum or sums of money under the above-mentioned Acts? at what rate of interest? how repayable? for what purpose or purposes? and on what security?

7.

What sum is required by way of loan from the Public Works Loan Commissioners?

8.

Has the Secretary of State sanctioned the borrowing of the loan applied for pursuant to section 57 of the Local Government Act, 1858, and also signified his recommendation of the advance by the Public Works Loan Commissioners according to section 12 of the Sewage Utilization Act, 1865?

If yea, forward copies of the sanction and the recommendation.

9.

For what purpose or purposes is the loan required, and under what Act and section are the works authorized?

Describe the works executed, in progress, and projected, and forward copies of the plans and specification, the resolutions of the sewer authority authorizing the execution of the works and relating thereto, and also relating to the borrowing of the sum required and the application to the commissioners for the money.

10.

Are there any and what waterworks companies established for supplying water within the limits in which the sewer authority is desirous of supplying or laying on water? If yea, evidence must be furnished that every such company is unable or unwilling to lay on water for the purposes proposed by the sewer authority, in terms of the 75th section of the Public Health Act, 1848.

11.

Are any lands or premises required to be purchased for the proposed works? If yea, have such lands and premises been purchased and paid for, and are there any and what charges or incumbrances affecting same?

12.

What is the estimated cost of the proposed works, including the cost of land and all other expenses? A copy of the estimate or tender, and of any report thereon, should be furnished.

13.

Have any and what contracts been entered into for the execution of the works? If yea, furnish an abstract or copy, and state what security has been taken for due performance, and what notices were given before entering into such contracts.

14.

If the works have been executed, a detailed statement showing the expense thereof should be furnished.

15.

What is the population of the parish and of the special drainage district respectively?

16.

What has been the annual value of the property in the parish according to the poor rate assessment in each of the last three years, and what rates have been assessed thereon?

17.

The like with reference to the special drainage district.

18.

What security is proposed to be given for repayment of the loan applied for if granted, by not exceeding 20 annual instalments, with interest at 5*l.* per cent. per annum on the principal from time to time remaining unpaid?

19.

What name have the sewer authority adopted (*vide* section 46 of the Sanitary Act, 1866)? and how are they designated on their common seal?

20.

Have all the requirements, provisions, and regulations of the Sewage Utilization Acts, 1865 and 1867, the Sanitary Acts, 1866 and 1868, and the Acts referred to therein or incorporated therewith respectively, been strictly complied with by the sewer authority?

N.B.—The answers to the foregoing queries must be written on this paper, and be verified by statutory declaration in the form attached, to be made before a magistrate.

I,

do solemnly and sincerely declare that the answers to the queries hereunto annexed, and numbered 1 to , both numbers inclusive, are true and just to the best of my knowledge, information, and belief. And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of an Act made and passed in the Session of Parliament of the fifth and sixth years of the reign of His late Majesty King William IV., intituled "An Act to repeal an Act of the present Session "of Parliament, intituled 'An Act for the more effectual "'abolition of oaths and affirmations taken and made in "'various departments of the State, and to substitute "'declarations in lieu thereof, and for the more entire "'suppression of voluntary and extra-judicial oaths and "'affidavits, and to make other provisions for the abolition "'of unnecessary oaths.'"

Subscribed and declared at this day of 1869.

(4.) Tables for the Registration of Diseases used by the Northumberland and Durham Medical Society, (Robert R. Carr, Esq.)

See Question 2788.

Registration of Disease.

A system of registration of disease in Newcastle-upon-Tyne, since the year 1863 has been carried on by the Northumberland and Durham Medical Society, and complete reports, entitled, "Health and Meteorology of Newcastle and Gateshead," with weekly tables of the actual number of cases of disease and death since the year 1867, have been issued by the same society.

The Reports from the first have been prepared by Dr. Philipson, of Newcastle, and have been read by him at the meetings of the Northumberland and Durham Medical Society, and afterwards printed in the transactions of the society. Frequently, upon the reading of the Reports, interesting and valuable discussions have followed, and upon different occasions, entirely from the statements contained in the Reports, representations have been made by the society to the authorities of the two towns, of the outbreak or alarming amount of typhus fever, or other epidemic disease.

The returns upon which the reports have been based are contributed weekly by the public medical practitioners, those in charge of the union districts, the charitable and public institutions. The returns have been regularly and most cheerfully forwarded, and are now complete, every practitioner engaged in the public practice of Newcastle and Gateshead assisting.

The expense of printing and issuing the blank schedules, and printing the reports, has been entirely defrayed by the Northumberland and Durham Medical Society.

Hereunto have been affixed the reports for the months of January and February 1869, one of the weekly schedules which are issued to the contributors, and one of the forms used in the compilation of the returns.

Newcastle-upon-Tyne, June 1869.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Registration of Diseases.

Return of New Cases of Disease coming under treatment in my public practice, during the week ending Saturday the of 186 , at

Diseases.	Number of Cases.	Deaths during Week.	Remarks.
Small-Pox			
Measles			
Scarlet Fever			
Diphtheria			
Hooping Cough			
Croup			
Diarrhœa			
Dysentery			
Asiatic Cholera			
Erysipelas			
*Continued Fever			
Typhus			
Enteric and Typhoid			
Relapsing			
Febricula			
Ague			
Rheumatic Fever			
Puerperal Fever			
Bronchitis and Catarrh			
Influenza			
Pleurisy and Pneumonia			
Phthisis			
Constitutional Syphilis			
All other Diseases			
Accident			
Total			

Signature

* Cases ought only to be returned under this heading when the distinctive kind of fever cannot be ascertained.

Return of Union, Charitable, and Public Institutions of Newcastle and Gateshead.

New Cases of Disease coming under Treatment during the week ending the day of 1869.

Diseases.	Newcastle.																					Gateshead.							Diseases.	Deaths.	
	Poor Law Districts.							Public Institutions.											Total.			Poor Law Districts.		Public Institutions.			Total.			Newcastle.	Gateshead.
								Infirmary.		Dispensary.																					
	St. Andrew's.	Jesmond, Heaton, and Byker.	All Saints.	St. Nicholas.	Elswick and Benwell.	Westgate.	Fenham and St. Andrew's.	In-Patients.	Out-Patients.	Central.	Eastern.	Western.	Elswick.	Out-Patients.	Fever Hospital.	Children's Hospital.	Workhouse.	Vagrant Ward.	Gaol.	For the Week.	Corresponding Week last Year.	Western.	Eastern.	Dispensary.	Fever Hospital.	Workhouse.	For the Week.	Corresponding Week last Year.			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			20	21	22	23	24					
Small-Pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Small-Pox	—	—
Measles	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Measles	—	—
Scarlet Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Scarlet Fever	—	—
Diphtheria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Diphtheria	—	—
Hooping Cough	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Hooping Cough	—	—
Croup	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Croup	—	—
Diarrhœa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Diarrhœa	—	—
Dysentery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Dysentery	—	—
Asiatic Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Asiatic Cholera	—	—
Erysipelas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Erysipelas	—	—
Continued Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Continued Fever	—	—
Typhus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Typhus	—	—
Enteric or Typhoid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Enteric or Typhoid	—	—
Relapsing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Relapsing	—	—
Febricula	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Febricula	—	—
Ague	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Ague	—	—
Rheumatic Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Rheumatic Fever	—	—
Puerperal Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Puerperal Fever	—	—
Bronchitis and Catarrh	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Bronchitis and Catarrh	—	—
Influenza	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Influenza	—	—
Pleurisy and Pneumonia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Pleurisy and Pneumonia	—	—
Phthisis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Phthisis	—	—
Constitutional Syphilis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Constitutional Syphilis	—	—
All other Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		All other Diseases	—	—
Accidents	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Accidents	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—		Total	—	—

Medical Officers, &c., to whom the Society is indebted for the above returns.

1	7	13	19
2	8	14	20
3	9	15	21
4	10	16	22
5	11	17	23
6	12	18	24

BOROUGH OF NEWCASTLE-UPON-TYNE.

A RETURN for the fortnight ending Saturday the 1869, of Deaths within the District of

(Signed)

Registrar of the District.

Date.	Name.	Age.	Residence.	Certified cause of Death.	Remarks.

Summary of the foregoing :—

Typhus Fever	Number of Cases	
Typhoid „	„	
Scarlet „	„	
Continued „	„	
Puerperal „	„	
Bronchitis	„	
Pertussis	„	
Diphtheria	„	
Inquest cases		
Total cases		
Corresponding week of last year		

MEDICAL REPORT of NEW CASES for the Week ending 1869.

Infectious Diseases.	New Cases only for the past Week.	Removed to Fever Hospital.	Died during the Week.	Number of Cases for the corresponding Week last Year.
Fever				
Measles				
Small-Pox				

Total Number of Cases for the Week ending 1869

„ „ „ for the Corresponding Week of last Year

Localities of New Cases

Remarks

(Signed)

Medical Officer of the Newcastle-upon-Tyne Union, District No.

(5.) MEMORIAL of the JOINT COMMITTEE on STATE MEDICINE of the British Medical and Social Science Associations. (HENRY W. RUMSEY, Esq., M.D.)

See Questions 4421, 6452.

To His Grace the Lord President of Her Majesty's Most Honourable Privy Council; to Her Majesty's Principal Secretary of State for the Home Department; and to the President of the Poor Law Board; the memorial of a Joint Committee of the British Medical and Social Science Associations, appointed to promote a better administration of the laws relating to registration, medico-legal inquiries, and the improvement of the public health, humbly sheweth,

That it seems to your memorialists not unreasonable to ask that the Imperial Parliament, which for many years has devoted much time and attention to the enactment of laws having reference to the amount, the causation, and the diminution of mortality in the United Kingdom, should take measures to ascertain how far its benevolent intentions have been appreciated, its laws obeyed, and its suggestions adopted; and how far, on the contrary, local regulations, customs, and prejudices, the parsimony of local authorities, the existence in the same districts of conflicting jurisdictions, and defects or obscu.ity in the laws themselves, have tended to defeat, in whole or in part, the labours of the Legislature.

It is affirmed by those whom large official experience entitles to speak with authority, that the registration of the causes of death, though much more satisfactory than it once was, is still very imperfect; that the registrar's certificate is not accepted as evidence of death by the Bank of England; and that, under the present system, which has doubtless led to the discovery of some murders, but probably allows many to escape detection, scarcely any further improvement is possible; while it makes absolutely *no provision* for returns of cases of disease not proving fatal, nor of children actually, or reputed to be, stillborn.

It is also felt by many, including coroners and others who know its working, that the present mode of conducting medico-legal inquiries tends in numerous instances to defeat the ends of justice; that verdicts are often arrived at by coroners' juries on evidence that is insufficient, erroneous, or misinterpreted; without any *post mortem* examinations, or after examinations made without the guidance of any fixed rules for the performance of them, and by persons unskilled in such investigations; while it is notorious that the appearance, in courts of justice, of medical witnesses summoned *ex parte* to speak not to matters of fact, but to matters of doubtful opinion, hinders or altogether prevents the discovery of truth, discredits scientific medicine, and is a fruitful source of perplexity and misconception to bench, bar, and jury.

It further appears, from extensive inquiries conducted by private individuals, in the absence of trustworthy official returns, that in many of the towns and districts of this country, scarcely a semblance of sanitary organization exists; that the majority of the large towns throughout the kingdom have no medical officers of health, and that, in most of those which have them, their remuneration is utterly inadequate; while, on the other hand, many local boards have been established, and even officers of health appointed, in places which are by for too small and insignificant for separate statistical reports; and that frequently their position of dependence on the local authorities renders those officers comparatively powerless for good. It appears, moreover, that inspectors of nuisances are often independent of the officer of health, instead of being under his control; that in many towns, where a single inspector—burdened, as is not unfrequently the case, with other laborious duties—is appointed to populations of 30,000, or 40,000, or, as in one case, of 130,000, and likewise in country districts, where such officers exist only in name, there is practically no inspection whatever; and that, owing to the want of public analysts, and competent inspectors of food, the Acts for the prevention of adulteration of food, and of the sale of deceased and unwholesome articles of food, must be, in most cases a dead letter. It is also proved by the Registrar-General's returns, that the death-rate, instead of being reduced, has in some extensive districts been maintained, while in others it has actually increased, during the last twenty years.

Yet it is believed, by those who have directed their attention to the subject, that the amount actually disbursed under the present disjointed and very inefficient system would, if otherwise distributed—the districts and many of the duties being consolidated—go far to maintain a sufficient staff of specially trained and highly qualified district scientific officers, with inspectorial functions. Without such officers it is vain to expect any material improvement in this important department of the public service.

For all these reasons, and for others set forth in the accompanying "Memorandum," (drawn up by Dr. Rumsey, and approved by the joint committee), we ask for a thorough, impartial, and comprehensive inquiry, by a Royal Commission having power to visit, or to send sub-commissioners to visit, the large towns and other districts of the country, to obtain information and evidence, and to report on:—

1. The manner in which the cases and causes of sickness and of death are and should be inquired into and recorded in the United Kingdom.

2. The manner in which coroners' inquests and other medico-legal inquiries are and ought to be conducted, particularly in regard to the methods of taking scientific evidence.

3. The operation and administration of sanitary laws, with special reference to the manner in which scientific and medical advice and aid in the prevention of disease are and should be afforded; and also with special reference to the extent of the areas or districts most convenient for sanitary and medico-legal purposes.

4. The sanitary organization, existing and required, including a complete account of the several authorities and officers. The education, selection, qualification, duties, powers, tenure, and remuneration of the said officers to be specially reported on.

5. The revision and consolidation of the sanitary laws, having special reference to the increase of the efficiency of their administration both central and local.

Signed in name and by appointment of the Joint Committee,

J. P. KAY SHUTTLEWORTH, Bart.,
HENRY W. ACLAND, M.D. Oxon., F.R.S., } *Chairmen.*

WILLIAM CLODE,
A. P. STEWART, M.D., } *Hon. Secs.*

London, May 1868.

(6.) MEMORANDUM on STATE MEDICINE, (H. W. RUMSEY, Esq., M.D.)

See Question 4421.

MATTERS TO BE PROVIDED FOR BY SKILLED LOCAL AGENCY.

I. We ask for a thorough, impartial, and comprehensive inquiry into the operation of the several laws, regulations, and customs under which members of the medical profession are employed, constantly or occasionally, in the towns and rural parishes of England, Scotland, and Ireland, or in some of them,—by different departments of Government, by public bodies, by local authorities, or in voluntary societies; or under which medical practitioners act as witnesses in courts of law and medico-legal inquiries, or otherwise; —for any of the following objects and purposes:

KIND OF AGENCY NOW EMPLOYED.

Mortuary registration.

1. To give information concerning the cause of death, by certificate to the registrars of deaths, and by evidence at coroners' inquests. — Local practitioners or special experts.

Medico-legal inquiries.

2. To perform post-mortem examinations and analyses, in suspicious or obscure cases, for the information of coroners and courts of law.

Medical and scientific observations.

3. To record and report, periodically, the number and nature of all cases of sickness (diseases and injuries) attended at the public expense, with their causes and results, and more minutely and frequently during outbreaks of epidemic disease; to observe and record meteorological and other physical phenomena; to note, investigate, and report outbreaks of epizootic and epiphytic diseases, and any exceptional and important local facts of animalcular, parasitic, fungic, or other like invasions. — Voluntary enterprize of local practitioners in a few towns.

Medico-sanitary inquiries.

4. To investigate and report, on particular occasions and in selected places, facts and circumstances relating to the prevalence of disease,—especially of epidemics. — Inspectors under Privy Council.

Interments.

5. To inquire into the condition of burial grounds, and to superintend the execution of laws and regulations for the burial of the dead. — Inspectors under Home Office.

Advice and aid to authorities.	6. To afford advice and aid to local authorities in matters relating to the public health; especially as to the avoidance and removal of causes of disease, and the condition and sanitary regulation of common lodging-houses and the dwellings of the poor.	Officers acting under local boards in certain places.
Sanitary measures, vaccination, &c.	7. To inquire into and report upon the local administration of laws for the prevention of disease and mortality; for instance, the extent and efficiency of proceedings under the Nuisances Removal Acts; the progress, performance, and results of vaccination, &c.	Inspectors under Privy Council.
Workhouses, medical relief and charities, &c.	8. To inquire into and report upon the sanitary condition and management of workhouses; and to inquire into the administration of medical relief to the poor, in districts and workhouse infirmaries; also in medical charities and other public institutions.	Inspectors under Poor Law Board * and Privy Council. Commissioners in lunacy, chancellor's visitors, county visiting physicians, and district medical officers.
Asylums, &c. for the insane.	9. To inquire into and report upon the condition and management of asylums, hospitals, licensed houses, and lodgings, for the reception and treatment of the insane.	Inspectors under Home Office.*
Prisons, &c.	10. To inquire into and report upon the sanitary condition and management of prisons, reformatories, and other corrective establishments.	Inspectors under Privy Council.*
Schools, &c.	11. To inquire into and report upon the sanitary condition and management of elementary schools and other places for the education and industrial training of the young.	Inspectors under Home Office,* certifying surgeons, and officers under local authorities.
Occupations, &c.	12. To examine and report on the sanitary condition and the protective regulations of mines, factories, potteries, bakehouses, dress-makers' establishments, and all other work places, under various enactments for the control and regulation of labour.	Officers (sometimes analytical chemists) under local authorities or county magistrates, in a few places.
Food and drinks.	14. To examine into the purity, genuineness, and wholesomeness of articles of food and drink supplied to the community, or to particular classes or public establishments; and to perform chemical analyses and microscopic examinations for the detection of poisons and adulterations.	Officers under local authorities, in some places.
Water supply.	14. To examine into and report upon the water supply of towns and villages, and the condition of rivers and streams.	Officers under local authorities. Inspectors under Board of Trade.
Gas, smoke, and chemical works.	15. To examine into and report upon the supplies of gas, the management of alkali (and other chemical) works, and the prevention of smoke and other noxious vapours, in towns and populous districts.	Officers under local authorities in a few places. Officers under Privy Council in certain cases. Custom House officers.
Animals.	16. To inspect, with or without the aid of scientific veterinarians, the animals intended for human food; to report and advise upon the manner in which such animals are kept and fed, conveyed by land or sea, and imported; and to assist in carrying into effect any Government regulations on these matters; and to examine into and report upon the condition of slaughter-houses, cow-houses, stables, pigsties, &c., &c.	Quarantine officer under Privy Council. Officers under local authorities.
Imported diseases.	17. To superintend and aid the execution of measures for preventing the importation of foreign pestilence at sea ports; for regulating the sanitary condition of ships; and for protecting the health of sailors and passengers.	Any registered medical practitioner. Special experts. Certifying surgeons.
Medico-legal certificates.	18. To investigate and certify the condition, physical or mental, of persons accused of crime, or needing legal protection, or demanding compensation for personal injury, or whose competency to fulfil any social or family duty, or labour-contract becomes the subject of legal inquiry,—and to determine the fitness of children and young persons for work. [*Under this head would be included certificates of insanity, and the duties of certifying surgeons, under various factory and labour enactments.*]	* Those marked with an asterisk are, with few exceptions, not medical.
Forensic evidence.	19. To give medical or scientific evidence on any of the preceding matters in courts of law.	

II. We suggest that, while many of the provisions and arrangements, described under the preceding head, are of merely partial, occasional, and exceptional application, there are several other objects, at present wholly unaccomplished, as to which legislative action is urgently required, and for the proper fulfilment of which, as also for the purposes before mentioned, the appointment of skilled medical officers in districts would be found necessary, for example:

Registration. 1. To examine and revise all registers of births and deaths, in registration districts; to verify the fact of death in certain cases; to investigate and record accurately, in all uncertified or doubtfully certified cases, the cause of death.

Medico-legal inquiries. 2. To bring special knowledge and experience to the conduct, under authorized rules, of post-mortem examinations for coroner's inquests or other medico-legal inquiries; and to examine before burial the bodies of infants alleged to be still-born.

Forensic medicine. 3. To act as medical referees in obscure or disputed cases—sanitary or medico-legal—which require forensic adjudication.

[*N.B. This requirement should be limited by the following recommendation (from Dr. Rumsey's Address on State Medicine at Dublin, 1867, p. 24): "That the Lord Chancellor "or the judges should appoint a limited number of eminent persons, men held in general "esteem, and known to be specially learned—some in psychology, some in the forensic depart- "ment of chemistry and toxicology—as assessors to the Courts of Assize. These officers of "circuits would receive the most important aid from the proposed official district "physician."*]

Interments, mortuaries, &c. 4. To advise and assist local authorities in carrying into effect regulations for the removal and burial of the dead, especially in crowded populations and in times of pestilence or great mortality; and to inspect mortuaries or other places for the reception of corpses before burial.

Dwellings. 5. To advise and aid local authorities, building societies, and other public companies in regulating the site, construction, and sanitary arrangements of dwelling houses, especially of those proposed to be erected for the poor, and to certify the satisfactory completion of such undertakings.

Venereal diseases. 6. In all populous districts, to direct and aid the execution of measures concerning the health of women, within the meaning of the Contagious Diseases Prevention Act, 1866, when the main provisions of that Act shall be extended to the civil population of the kingdom.

Pharmacy. 7. Aided by skilled pharmacians or scientific chemists, to inspect establishments for the sale and preparation of medicines, and to detect adulterations of drugs.

Medical police.

8. When directed by a proper authority, to inquire into and report upon offences against the Medical Act, especially "infamous conduct in any professional respect" of medical practitioners, in their respective districts.

Nurses and female midwives.

9. To inquire into the qualifications of midwives and nurses, in the same districts; and to aid in carrying into effect any law which may be enacted for the examination and license of women intending to act in such capacities.

III. We believe that abundant evidence can be adduced to show,—

Defective and incoherent legislation and administration.

(1.) That the laws and regulations which relate to the appointment and action of medical men in the statistical, medico-legal, supervisory, and sanitary departments of the public service, are for the most part defective, complicated, and incoherent; that they differ considerably in different places and parts of the kingdom; that they are often inefficient and fallacious in operation, and sometimes even found to be subversive of their professed objects;

No special qualification for officers.

(2.) That there is no sufficient guarantee for the general competency or the special qualifications of the medical men appointed; no recognized plan of education for officers of health and medical jurists, nor any examining body for directing the standard of their acquirements and for attesting them;

Impediments to free exercise of opinion and function.

(3.) That these appointments are made without any proper conditions to secure the free, unbiassed, and unfettered exercise of judgment, delivery of opinion, and discharge of duty;

Ill-defined districts and conflicting jurisdictions.

(4.) That the districts and areas of jurisdiction in which sanitary and other public medical duties are now performed, are not defined or settled on any sound or rational principle; that, except in the metropolis, they are rarely conterminous with other districts for local administration or record; and that they are not used for the performance of the same functions in all parts of the kingdom;

Entire neglect of the majority of the population.

(5.) That the greater portion of the population is now excluded from the benefits which might result even from the present imperfect system of appointments;

Want of authorized co-operation of officers.

(6.) That there is a total absence of and a great necessity for some authorized co-operation between the several medical persons officially employed in different public duties within the same district;

Necessity for organization and consolidation of duties.

(7.) That many sanitary enactments, protective regulations, and medico-legal investigations are imperfectly carried into effect, owing to the want of a scientific staff of officers, appointed to act in districts of extent sufficient to engage the whole of their time and attention; and

(8.) That, consequently, an improved organization of districts, and a consolidation of public medical duties therein, are indispensable to the efficiency and economy of local administration.

April 1868.

(7.) Return of Municipal Boroughs (Wm. Farr, Esq., M.D., F.R.S.)

See Questions 4440, 5046 and 5054.

At the census of 1861 there were 781 towns in England and Wales containing a population of 10,960,998.

The Commissioners appointed in 1834 to inquire into the municipal corporations visited and instituted inquiries in 286 places, of these

178 were subsequently placed under the operation of the Municipal Corporations Act (1835).

2 (Hartlepool and Ashton-under-Lyne) were at a more recent period, brought under the provisions of that Statute on new Charters being granted to them.

16 contained corporations which proved to be of a character exclusively manorial.

89 were ultimately left undisturbed by the legislative enactment.

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By Section 141 of the Municipal Corporations Act (5 & 6 Wm. IV., c. 76.) charters of incorporation may be granted to towns on the petition of the inhabitant householders if Her Majesty, by the advice of Her Privy Council, shall think fit to grant them.

178 boroughs were as above-mentioned named in the schedule to this Act.

18 towns received charters between 1835 and the census of 1851 (when the population of the 196 was 4,473,138).

11 towns received charters between 1851 and the census of 1861 (when the population of the 208 was 5,432,637).

It is stated in the census volume of 1851 that "Pwllheli, though comprised in the Municipal Corporation Act, has ceased to elect a mayor or other officer."

Municipal Boroughs in England and Wales.

Name of Municipal Borough.	Population, 1861.
DIVISION I.	
Middlesex.	
London	112,063
DIVISION II.	
Surrey.	
Godalming	2,321
Guildford	8,020
Kingston-on-Thames	9,790
Kent.	
Canterbury	21,324
Deal	7,531
Dover	25,325
Faversham	5,858
Folkeston	8,507
Gravesend	18,782
Hythe	3,001
Maidstone	23,016
Margate (Charter 1851–61)	8,874
Rochester	16,862
Sandwich	2,941
Tenterden	3,762
Sussex.	
Arundel	2,498
Brighton (Charter 1851–61)	77,693
Chichester	8,059
Hastings	22,837
Rye	3,738
Hampshire.	
Andover	5,221
Basingstoke	4,654
Lymington	2,621
Newport	7,934

Name of Municipal Borough.	Population, 1861.
Portsmouth	94,799
Romsey	2,116
Southampton	46,960
Winchester	14,776
Berkshire.	
Abingdon	5,680
Maidenhead	3,895
Newbury	6,161
Reading	25,045
Wallingford	2,793
Windsor	9,520
DIVISION III.	
Hertfordshire.	
Hertford	6,769
St. Albans	7,675
Buckinghamshire.	
Buckingham	3,849
Chipping Wycombe	4,221
Oxfordshire.	
Banbury	4,059
Chipping Norton	3,137
Oxford	27,560
Northamptonshire.	
Daventry	4,124
Northampton	32,813
Huntingdonshire.	
Godmanchester	2,438
Huntingdon	3,816
Bedfordshire.	
Bedford	13,413
Cambridgeshire.	
Cambridge	26,361
Wisbech	9,276
DIVISION IV.	
Essex.	
Colchester	23,809
Harwich	5,070
Maldon	4,785
Saffron Walden	5,474
Suffolk.	
Beccles	4,266
Bury St. Edmunds	13,318
Eye	2,430
Ipswich	37,950
Southwold	2,032
Sudbury	6,879
Norfolk.	
Great Yarmouth	34,810
Kings Lynn	16,170
Norwich	74,891
Thetford	4,208
DIVISION V.	
Wiltshire.	
Calne	2,494
Chippenham	1,603
Devizes	6,638
Marlborough	3,684
Salisbury	12,278
Dorsetshire.	
Blandford	1,521
Bridport	7,719
Dorchester	6,823
Lyme Regis	2,318
Poole	9,759
Shaftesbury	2,497
Weymouth and Melcombe Regis	11,383
Devonshire.	
Barnstaple	10,743
Bideford	5,742
Dartmouth	4,444
Devonport (Charter 1835–51)	50,440
Exeter	33,738
Honiton (Charter 1835–51)	3,301
Plymouth	62,599
South Molton	3,830
Tiverton	10,447
Torrington	3,298
Totnes	4,001
Cornwall.	
Bodmin	4,466
Falmouth	5,709
Helston	3,843
Launceston	2,790
Liskeard	4,689
Penryn	3,547
Penzance	9,414
St. Ives	7,027
Truro	11,337
Somersetshire.	
Bath	52,528
Bridgwater	11,320
Chard	2,276
Glastonbury	3,496
Wells	4,648
Yeovil (Charter 1851–61)	7,957
DIVISION VI.	
Gloucestershire.	
Bristol	154,093
Gloucester	16,512
Tewkesbury	5,876
Herefordshire.	
Hereford	15,585
Leominster	5,658
Shropshire.	
Bridgnorth	6,240
Ludlow	5,178
Oswestry	5,414
Shrewsbury	22,163
Wenlock	19,699
Staffordshire.	
Hanley (Charter 1851–61)	31,953
Lichfield	6,893
Newcastle-under-Lyme	12,938
Stafford	12,532
Tamworth	4,326
Walsall	37,760
Wolverhampton (Charter 1835–51)	60,860
Worcestershire.	
Bewdley	2,905
Droitwich	3,124
Evesham	4,680
Kidderminster	15,399
Worcester	31,227
Warwickshire.	
Birmingham (Charter 1835–51)	296,076
Coventry	40,936
Stratford-on-Avon	3,672
Warwick	10,570
DIVISION VII.	
Leicestershire.	
Leicester	68,056
Rutlandshire.	
Nil.	
Lincolnshire.	
Boston	14,712
Grantham	4,954
Great Grimsby	11,067
Lincoln	20,999
Louth	10,560
Stamford	8,047

Name of Municipal Borough.	Population, 1861.
Nottinghamshire.	
East Retford	2,982
Newark	11,515
Nottingham	74,693
Derbyshire.	
Chesterfield	9,836
Derby	43,091
DIVISION VIII.	
Cheshire.	
Chester	31,110
Congleton	12,344
Macclesfield	36,101
Stalybridge (Charter 1851–61)	24,921
Stockport	54,681
Lancashire.	
Ashton-under-Lyne (Charter 1835–51)	34,886
Blackburn (Charter 1835–51)	63,126
Bolton (Charter 1835–51)	70,395
Burnley (Charter 1851–61)	28,700
Clitheroe	7,000
Lancaster	14,487
Liverpool	443,938
Manchester (Charter 1835–51)	338,722
Oldham (Charter 1835–51)	72,333
Preston	82,985
Rochdale (Charter 1851–61)	38,114
Salford (Charter 1835–51)	102,449
Warrington (Charter 1835–51)	26,431
Wigan	7,3658
DIVISION IX.	
Yorkshire, West Riding.	
Bradford (Charter 1835–51)	106,218
Dewsbury (Charter after 1861)	18,148
Doncaster	16,406
Halifax (Charter 1835–51)	37,014
Leeds	207,165
Pontefract	5,346
Ripon	6,172
Sheffield (Charter 1835–51)	185,172
Wakefield (Charter 1835–51)	23,350
Yorkshire, East Riding.	
Beverley	9,654
Hull	97,661
Yorkshire, North Riding.	
Middlesborough (Charter 1851–61)	18,992
Richmond	4,290
Scarborough	18,377
York	40,433
DIVISION X.	
Durham.	
Durham	14,088
Gateshead	33,587
Hartlepool (Charter 1835–51)	12,245
South Shields (Charter 1835–51)	35,239
Stockton	13,357
Sunderland	78,211
Northumberland.	
Berwick-upon-Tweed	13,265
Morpeth	4,296
Newcastle-upon-Tyne	109,108
Tynemouth (Charter 1835–51)	34,021
Cumberland.	
Carlisle	29,417
Westmoreland.	
Kendal	12,029
DIVISION XI.	
Monmouthshire.	
Monmouth	5,783
Newport	23,249
SOUTH WALES.	
Glamorganshire.	
Aberavon (Charter 1851–61)	2,916
Cardiff	32,954
Neath	6,810
Swansea	41,606
Carmarthenshire.	
Carmarthen	9,993
Llandovery	1,855

Name of Municipal Borough.	Population, 1861.
Pembrokeshire.	
Haverfordwest	7,019
Pembroke	15,071
Tenby	2,982
Cardiganshire.	
Aberystwith	5,641
Cardigan	3,543
Brecknockshire.	
Brecknock	5,235
Radnorshire.	
Nil.	
NORTH WALES.	
Montgomeryshire.	
Llanidloes	3,127
Welshpool	7,304
Flintshire.	
Flint	3,428
Denbighshire.	
Denbigh	5,946
Ruthin	3,372
Wrexham, Charter 1851–61.	7,562
Merionethshire.	
Nil.	
Carnarvonshire.	
Carnarvon	8,512
Pwllheli	2,818
Anglesey.	
Beaumaris	2,558

Towns with Large Populations not regulated by Municipal Corporations Act.

Towns.	Population. 1851.	1861.
Accrington	7,481	13,872
Barnsley	13,437	17,890
Belper	10,082	9,509
Birkenhead	37,513	41,649
Brentford	8,870	9,521
Burton-upon-Trent	7,934	13,671
Bury	31,262	87,563
Chatham	28,424	36,177
Cheltenham	35,051	39,693
Chorley	8,907	15,013
Croydon	10,260	20,325
Darlington	11,228	15,781
Darwen, Over	7,020	14,327
Dukinfield	12,132	15,024
Frome	10,148	9,522
Glossop	17,454	19,126
Heywood	12,194	12,824
Huddersfield	30,880	34,877
Hyde	10,051	12,722
Keighley	13,050	15,005
Leamington	15,692	17,958
Lewes	9,533	9,716
Loughborough	10,900	10,830
Lowestoft	6,580	10,663
Luton	10,648	15,329
Merthyr Tydfil	63,080	83,875
Middleton	5,740	9,876
Oldbury	5,114	15,615
Peterborough	8,672	11,735
Ramsgate	11,838	11,865
Runcorn	8,049	10,434
Ryde	7,147	9,269
St. Helens	14,866	18,396
Sheerness	8,549	12,015
Taunton	14,176	14,667
Todmorden	4,532	11,797
Tunbridge Wells	10,587	13,807
Wednesbury	11,914	15,298
West Hartlepool	—	12,603
Whitby	10,989	12,051
Whitehaven	18,916	18,842

(8.) Extract from the Appendix to the Registrar-General's 27th Annual Report, 1866, (Wm. Farr, Esq., M.D., F.R.S.)

See Questions 4469 and 5193.

In the earliest dawn of the nation the English inquired into the causes of death with a view to discovery and prevention. The protection of life was a fundamental principle of their laws. It was as much an object of their political organization as national defence or war. And the dead body, it was held, called for the coroner's inquest whenever death was sudden or violent or in prison; that is, whenever it was the result, or appeared to be the result, of any discoverable cause. The plagues of the 16th century proved that human life is exposed to invisible enemies, more deadly that the mechanical forces of nature, the ferocity of animals, or the malignity of manslayers; and towards the end of Queen Elizabeth's reign the London bills of mortality were commenced (1592). It was part of the general measures of her able government, by which abstracts of burials, baptisms, and marriages were directed to be compiled in each parish; and persons were appointed to view the bodies of all that died before they were suffered to be buried, and to certify of what probable disease each individual died, in statements of which it was the duty of the minister to make a weekly return. The deaths by plague and by all other diseases in the aggregate were published in the London bills so early as 1603; and in 1629 the several casualties were set forth weekly. Graunt gives a complete return for the year 1632 of the causes of 9,535 deaths in London, whereof eight were of the plague.* He says, that though not published, "the original entries in the *Hall-*" *books* were as exact in the very first year as to all parti-" culars as now; and the specifying of casualties and " diseases was probably more."

Graunt thus describes the mechanism by which the observations in this remarkable series of tables were collected:

" When anyone dies, then, either by tolling or ringing of a bell, or by bespeaking of a grave of the *sexton*, the same is known to the *searchers*, corresponding with the said *sexton*.

" The *searchers* hereupon (who are ancient matrons sworn to their office) repair to the place where the dead corpse lies, and *by view of the same*, and by other enquiries, they examine by what *disease* or *casualty* the corpse died. Hereupon they make their report to the *parish clerk*, and he, every *Tuesday* night, carries in an accompt of all the *burials* and christenings happening that week to the Clerk of the Hall. On Wednesday the general accompt is made up and printed, and on Thursday published and dispersed to the several families who will pay four shillings *per annum* for it."

Graunt discusses the value of the bills, and shows what " corrections upon the, perhaps, ignorant and careless " *searchers'* reports," were required; at the same time he says, as " many of the casualties were but matter of sense," the searchers' reports might be sufficient in such cases. In many of the more intricate cases " the *searchers* are able " to report the opinion of the *physician* who was with the " patient, as they receive the same from the friends of the " defunct;" and in very many cases, such as drowning, small-pox, dropsy, falling sickness, palsy, ague, rickets, their own senses were, in his opinion, sufficient.

Many of Graunt's judicious observations on the casualties of the bills are applicable to the reported casualties of the remotest parts of the country in the present day; for some districts still represent the ignorance of the cities of ages gone by. And Graunt was essentially right, for there can be no doubt of the value of even the imperfect reports of facts in the early bills directly concerning the life and death of Englishmen. They had on them in Graunt's book the approving stamp of the Royal Society. Sydenham, it is evident, had the London bills before him in writing his imperishable commentaries. Arbuthnot used them in an argument on Divine Providence and in the interests of morality.† Heberden in a masterly paper illustrated the use of the weekly observations, and deduced from them an important law.‡ Simpson and Price constructed life tables from the London bills.

The parish clerks of London deserve our gratitude for their perseverance in publishing the bills, which the citizens took in weekly for " no other reason " that Graunt could discover than curiosity about increase and decrease of burials or rare casualties, " so as they might take the " same as a text to talk upon in the next company;" and in the plague time, " that so the rich might judge of the " necessity of their removal, and that tradesmen might " conjecture what doings they were like to have in their " respective dealings." Similar bills were commenced in some other English and continental cities, but they were allowed to drop, leaving the series incomplete.

While medical science advanced, the weekly bills remained stationary; their interest was not kept up by eruptions of plague; dissenters' burials were not included; and the clerks of many parishes made no returns, or only made them irregularly. And even when complete, the bills gave no information about the population of the towns and counties of the whole kingdom.

It was only in 1837, five years after the first epidemic of cholera, that under the Registration Act provision was made for the inquiry into the cause of nearly every person's death. The column of the schedule headed " Cause of Death " was introduced in the House of Lords. There has then since July 1st, 1837, been two kinds of inquests into the cause of death,—the coroner's inquest and your inquiry.

The latter measure appears to have been looked upon as experimental. There was no view of the body, no arrangement for obtaining evidence, no machinery for instituting inquiry; and where there had been no medical attendant, or where the medical attendant refused to supply the information in his possession, no means of getting the required facts, except by making the medical man the legal informant. The imperfect information of the coroners was expressed in rude, vague, antiquated language, and was less satisfactory than that supplied from other sources. The heads of the medical profession supported the Registrar General's efforts to overcome the first difficulties; you circulated medical certificate books with a *Nosology* freely among the profession all over the country. You addressed coroners, and since the office has been strengthened by the Act authorizing the payment of medical witnesses, their information is much more valuable than it ever was before. The result is apparent in the returns of the present year. You succeeded in providing in medical men frequent substitutes for uninstructed jurymen and " ancient matrons sworn." Under the present administrative arrangements little further progress can be made.

It is notorious that the registration of the cause of death in its present form has contributed to bring crime to light, and has facilitated the conviction of the guilty. The trials of Palmer, Pritchard, and other criminals afford illustrations. Enough has been done since the passing of the Registration Act to establish the utility of general inquiry into the causes of all deaths, and to justify the employment of the machinery necessary to make the inquiry as complete as possible for accuracy of record, for protection of life, and for the furtherance of medical science.

It will be borne in mind that the coroner and his jury can only conduct the inquiry on view of the body (super visum corporis); by the first statute (4 Ed. 1. stat. 2. A.D. 1276) it is enacted, that on being commanded by the king's bailiff or other honest men of the country the coroner of our Lord the King " *shall go to the* PLACES *where any be slain,* " *or suddenly dead or wounded* * * * and shall forth-" with command four of the next towns, or five or six, to " appear before him in such a place." The coroner inquired upon oath, and his information was based upon actual examination of the body, the place, and the surrounding persons. The searchers of the London bills were also instructed " to repair to *the place where* the dead corps " lies, and *by view of the same*, and by other inquiries, to " examine by what disease or casualty death was caused." The registry of burial in the Established Church is a public act; the coffin and several witnesses are before the clerical registrar; but the identification of the body in the place of death is lost. And in a large city anybody may be buried under any name. By the code Napoleon the Registrar is bound to *see the body*, and to register the death on the information of two men of full age (21), and without his certificate the body cannot be interred. (Code Civil, Livre 1. tit. 1. s. 77.)

77. " Aucune inhumation ne sera faite sans une autorisation, sur papier libre et sans frais, de l'officier de l'état civil, qui ne pourra la délivrer qu'après s'être transporté auprès de la personne décédée, pour s'assurer du décès, et que vingt-quatre heures après le décès, hors les cas prévus par les règlemens de police." See also s. 37.

Should any signs of death by violence be discovered, or any suspicions be aroused, the body can only be buried

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* Natural and political observations upon the London Bills of Mortality. By Capt. John Graunt, Fellow of the Royal Society. Tuesday, June 20, 1665. At a meeting of the Council of the Royal Society ordered to be printed. 5th ed. 1676.

† An argument for Divine Providence taken from the constant regularity in the births of both sexes. By Dr. John Arbuthnot, Trans. of Royal Society. Vol. xxvii. p. 186. He shows by the London bills that males always exceed females in the yearly births, but that external accidents make a great havoc among males. He concludes that "polygamy is contrary to the law of nature and justice."

‡ See Influence of Cold upon Health. By W. Heberden, junior, M.D. Phil. Trans. 1796, p.

after the circumstances of the death have been inquired into and reported on by a police officer, aided by a physician or surgeon. (s. 81.)

This is the spirit of the registration law on the continent. The inspector of the dead in Austria is called *Todbeschauer*. In Brussels notice of every death is sent to the Town Hall, with the address, and a medical inspector inquires into the circumstances and registers every death.*

In England under the Act 6 & 7 Will. 4. c. 86, death registration is a simpler process. A person *present* at the death, or *in attendance during the last illness*, of the deceased person, goes to or sends for the registrar of the district in which the death happens, gives the requisite information,† and signs the register book as the informant either in writing or by mark. The qualification implies that the informant has seen the deceased person alive during the last illness, but beyond that there is no restriction in the Act as to capacity, character, sex, or age.

The table in next page shows the sex and qualification of informants in certain districts.

The informant and the registrar are usually alone during the act of registration; no witness is required; and, if present, no witness is allowed to sign the book.‡ If the persons qualified to give information do not come to the registrar, he is directed to go to the house where the death occurred, "or *wherever* such person *qualified* to give information can be found, and ask for it." When found, informants "by refusal to give information, and to sign "the register books, render themselves liable to be indicted for a misdemeanor." The inducement to take the initiative turns on the use of the registrar's certificate, which given after registration is authority for the burial of the body. Any person burying a dead body without the certificate of the registrar or the coroner, and neglecting to give notice of the burial within seven days, incurs a penalty not exceeding 10*l.* for every such offence.§

Registration is thus performed without any expense to the parties, and with as little trouble and expense to the public as possible. Copies of the entries in the register books made by the registrars, and verified by the superintendent registrars, are sent every three months to the General Register Office, where they serve for statistical and other important purposes. A certified copy of an entry, sealed at the General Register Office,* says the Act, shall be received as evidence of the death to which the same relates, without any further or other proof of such entry.

Now it is reported † that in the case of Leach v. Leach the Vice-Chancellor observed, that he could not be satisfied with the sealed certificate; "all the registry proved," he is made to say, "was this, that some one called at a particular "house, and was told by some one that a man named so-"and-so was dead. Although such evidence was parliamentary he did not consider it sufficient here." Commenting upon the case in which Fletcher during her life registered the death of a lady of the name of Slack, and with the help of the registrar's certificate and a forged will took consols to the amount of 5,000*l.* from the Bank of England, the *Times* thus criticised the act: "The registrar "receives information of the death at his office; he does "not go to the house and scene of death. He is thus "necessarily liable, more than could have been the case "before, to impostures. A party calls at his office, gives "information of the death, and receives the certificate."

The Vice-Chancellor can scarcely be correctly reported; for the Act distinctly states that the register is invalid unless the informant has signed in it his name, description, and place of abode,‡ thereby rendering himself subject to the pains and penalties of perjury if he has wilfully made any false statement touching any of the particulars to be registered.§ And Fletcher not only got a false certificate, but procured probate of a forged will.

It must, however, be admitted that in a large city the registrar sitting in his office has no means, or very imperfect means, of knowing and identifying informants, or of verifying the accuracy of the various particulars which he enters on the national registers. The Bank of England refuses to accept the death certificate as a proof of death.

The registrars, appointed generally by boards of guardians, before their appointment is confirmed by you, answer questions in writing, and their competency is proved by their copies sent to the office, and by the state of their registers, which are periodically examined by inspectors. The registrars are a highly respectable body of men of all the various classes of society, and as they are only paid small fees they are necessarily engaged in other professions, in trades, or in some branch or other of industry. The work requires integrity, accuracy, sound sense, good writing, and close attention to all the minute provisions of the Act and of the regulations. The clerical part of their duty is checked by the inspectors by the superintendents, and by the central record department; but there is at present no means of checking the registered facts, or of determining the degree of accuracy with which informants report and registrars record the particulars of each entry. Where the informant is educated and interested, he naturally reads before signing the entry, and thus to some extent checks the work. Unfortunately it happens that in a large proportion of cases the informants sign by a mark, and as they cannot write their names they cannot read the record which they sign alone in the presence of the registrar. They cannot check the record. This has given occasion to cases of fraud which could scarcely have been anticipated.

NUMBER of MALE and FEMALE INFORMANTS who SIGNED WITH MARKS in a DISTRICT or SUB-DISTRICT in EACH of the 11 DIVISIONS of the KINGDOM, and in the COUNTY of NORTHAMPTON, during a Portion of the Year 1864.

DISTRICTS, &c.	Total Deaths.	Number of Inquests and Deaths in Institutions.	Deaths, exclusive of Inquests and Institutions.	Informants to Deaths in Col. 3.			
				Total Number.		Number who made a Mark.	
				Males.	Females.	Males.	Females.
Cols.	1	2	3	4	5	6	7
Chelsea - - - District	461	127	334	61	273	7	88
Reading - - - District	143	20	123	31	92	5	38
Peterborough - - - District	184	9	175	26	149	12	105
Romford - - - District	166	11	155	21	134	7	91
Highworth - - - District	84	12	72	8	64	1	47
Rugby - - - - District	141	13	128	23	105	4	59
Derby - - - - District	307	39	268	113	155	15	80
St. Martin, Liverpool - - Sub-district	656	40	616	207	409	68	299
Halifax - - - District	830	66	764	444	320	105	242
Durham - - - District	401	29	372	165	207	43	108
Carnarvon - - - District	195	6	189	109	80	45	68
COUNTY OF NORTHAMPTON - - -	1,305	88	1,217	181	1,036	52	784

* Early one morning after the annual fêtes in which the Belgians so much delight, I accompanied Dr. Verstraten on his pilgrimage to the chambers of the dead scattered over the city, and it was a very striking and varied spectacle. At one hour we stood in the midst of lights and incense by the body of a lady of rank, at another in a wretched attic by the corpse of a father of a family of sleeping children, and finally, after traversing many streets, finished our course at the Lying-in Hospital. He inquired into the circumstances and causes of every death.

† In default of the qualified informants as above described, it is incumbent on the *occupier of the house* to give information, upon being requested so to do by the registrar. Of the occupier's death an inmate may be the informant.

‡ See Regulations for Duties of Registrars, and Act 6 & 7 Will. 4. c. 86. 1836.

§ Registration Act, Section XXVII.

* Section XXXVIII.

† *Times*, March 6th, 1844.

‡ Section XXVIII.

§ Section XLI.

In the course of twenty-nine years, out of a body of 2,200 officers, four, for the sake of the shilling an entry, inserted long series of fictitious entries of deaths which never occurred. They invented all the particulars of hundreds of deaths. The first case was that of a registrar of All Souls, Marylebone, who died before the discovery; he served under a most acute superintendent registrar. The second case was that of a registrar of Howard-street sub-district, Liverpool, of respectable connexions, who for fictitious entries was dismissed, convicted of felony, and sentenced to six months' imprisonment with hard labour. These two cases, and another at South Shields, are referred to in your reports,* and the required corrections are made in the calculations of the mortality of Marylebone, of South Shields, and of Liverpool. This offence, it may be mentioned, was first distinctly defined in the Forgery Act of 1861 (24th & 25th Victoria), under which the wilful insertion of any "false entry of any matter relating to any death" renders the offender liable, on conviction, to penal servitude for life (s. 36); yet a registrar of Howden, who began registering fictitious entries about ten years ago, continued the practice up to a recent date under the eye of his superintendent, and subject to the periodical visitation of intelligent inspectors. The causes of death were copied, with slight variations, from medical certificates, and his imaginary informants were represented as signing with marks. This a man of ordinary capacity dared and was able to do, because while there is a check on the handwriting and the form of entry, there is no check whatever on the accuracy of record, or on the veracity of informants. The facility of signing with marks of single informants tempted four men into the commission of these extraordinary crimes for the sake of small sums of money. For money the same criminals might, it is to be feared, with the hope of impunity before them, have falsified the record of important facts affecting vast amounts of property in insurances and successions. Fictitious entries embarrass statistical inquirers, and they were first brought to light in this office by the exorbitancy of the results. The Howden fraud was kept within narrower limits; it was discovered through the clergyman of a parish where the mortality was exaggerated.

It is deplorable that a single case of fictitious entry by a registrar, or of deliberate fraud by informants, should have occurred during 27 years; but it must be borne in mind that few registrars among many thousands, and few informants among many millions exposed to temptation, have criminally falsified the public records. The wilful falsifications are insignificant in number in comparison with the errors in 11,011,291 entries on the death registers.

I have referred to such defects of registration as vitiate the evidence that the registers afford affecting property, and the use of the records for scientific induction. I have now to refer to the imperfect security afforded by incomplete as compared with complete registration against murder and attempts on life. The following death was thus registered:

"Died 11th June 1848, at Wix (Manningtree), William Constable, aged 38 years, labourer decline (3 months). *Not certified.*

"× The mark of Mary Faint, present at the death, Wix."

This was one of the Essex poisonings. The man, it was afterwards discovered, was poisoned with arsenic by his half-sister, Mary May, aged 28. She was tried at Chelmsford, found guilty, and executed.

The facility of registration in this easy way does not discourage the criminals. They go on with greater confidence. And this was only the first discovered case of a series of similar murders of husbands and children by wives and others, who could make their marks and administer arsenic in the Essex villages of Wix, Bradfield, Ramsay, Dovercourt, Tendring, Thorpe, Kirby, Mistley, Great Oakley, and Great Holland.† Sir James Graham, in the House of Commons, in June 1846, referring to another series—the Norfolk poisonings—said: "There was reason to believe "that in the county of Norfolk no fewer than 20 persons "had died from poison administered by one individual, "and in none of these cases had an inquest been held." I may cite other instances.‡ One murder successfully registered without detection led to the commission of more murders, and murder became epidemic by imitation. It is probable that the number of such cases was exaggerated, but the terror they inspire is in itself an evil, and by crimes of the kind the country is dishonoured in the eyes of the world.

These deaths occurred in country villages among ignorant people, but in towns the detection of crime is rendered in certain cases much more difficult than it is in the country. The body can be buried in any churchyard or cemetery without a registrar's certificate; and the clergyman or burying officer, though bound to give the registrar notice (which he sometimes forgets), can only give such particulars as the parties conducting the funeral supply. The notice, if written, may be addressed to the wrong registrar, or be so vague or perhaps erroneous that the registrar of a large district, like Islington in London, cannot find the house in which the death occurred. Bodies are sometimes removed unregistered to other districts for burial, and all traces of them are lost. As still-born children are not registered at all, and are buried with little difficulty, there is a great temptation to inter the bodies of children living only a short time as still-born. This opens another gate to crime.

By forbidding, as in France, the burial of any body without the registrar's certificate, the latter class of evils will be obviated; and although inconvenience must occasionally arise from the absolute prohibition of the burial of the uncertified dead, that inconvenience should be encountered for the sake of many compensating advantages.

There is another defect in the Act: some old women and men, like hermits of old, live in solitary dwellings; in their last illness terminating suddenly they may have no person in attendance, and no witness present at their death. In these cases there is no legally qualified informant, and the deaths are not registered; the causes of death remain for ever unknown. The coroners are now paid by fixed salaries, and in many cases of violent deaths they do not hold inquests, unless they are led to suspect crime. This saves the county expense, but it has resulted in the absolute non-registration of deaths.*

Such are some of the defects by which the registration of the causes of death, and of the fact of death itself, is rendered less useful than it might be made for the purposes of science, for sanitary administration, for evidence affecting successions of property, and for the protection of life. To remedy these defects amendments of the Act are required; families must take more trouble to find qualified informants, and the country must consent to pay the necessary expenses of fuller inquiry.

It is now sufficient to send to the register office one informant, such as a nurse, and although a medical certificate is asked for, it is not indispensable by law, and is often not produced. That is all the trouble families are put to in registering their dead; and the registrar gets *a shilling* from the poor rate for recording, and making copies of the entry to be transmitted to the central office. The superintendent registrar gets 2*d.* for examining the copy of the entry with the original entry. Each death costs the country *twenty pence* for registration, including pay of officers, cost of books, ink, copying, custody of records (which it is expected will last for centuries), indexing, analysing statistically, and administration.

The inquiry into the cause of death might be made sufficient for all its great and useful purposes by a simple extension of the system of medical certificates which you introduced, and which has for many years been in partial use. And as I am not disposed, in imitation of foreign practice, to relinquish the principle of confidence in the medical attendants on families, I submit that having been in attendance up to the date of death, their certificates should still be received, provided they *have seen the deceased on the day of death, or have seen the body subsequently for identification.* It would be undesirable to enforce the grant of the certificate by any penalty; and under this arrangement the medical attendant should charge the family a fee in proportion to his ordinary charges. For pauper patient the poor law medical officer should be entitled for the certificate of death to a fee fixed by the commissioners.

Under these circumstances many deaths which are now "certified" would be "uncertified" by medical attendants,

* See Report IX. pp. 177 and 238–9. Report XIII. p. 294.

† These cases are well described in the letter of a barrister in the Morning Chronicle, April 11th, 1849.

‡ In one case it happened that Mr. Hitchins, who was coroner for Kestevan and Parts of Pindsey, was also a Registrar of Deaths in Lincoln. He assigned the following reasons for wishing to retain the latter office:—"My "object in desiring to retain office is not for the emolument, but because I "have found it to assist me essentially in my office of coroner. By its means "of information three murderers, and one for manslaughter, have been "transported; and at the present time two murderers, and one for man-"slaughter, are for trial at the next assizes, from being unable to obtain cer-"tificates."—*Letter dated Lincoln, 3d February* 1849. The murderers in another district might have escaped, as the deaths might have been registered without a certificate.

* I subjoin an illustrative case:—

(Copy.) Superintendent Registrar's District, Chepstow,
Registrar's District, Lydney,
Sir, May 17th, 1866.

On Tuesday last, the 15th day of May, a lad named George Morgan, aged 16 years, accidentally fell into Lydney Basin and was drowned; he was never seen alive after falling into the water. The sergeant of police informed the coroner for the district of the accident, and the coroner informed the police there would not be any occasion for an inquest in such a case, as there was not any doubt as to how the lad came by his death. I should be glad to be informed of the proper way for me to make the entry in the Register Book of Deaths, and also as to the party to be the informant.

I remain, Sir,
Your obedient servant,
WILLIAM PACKER, Registrar,
Lydney District.

To
The Registrar General.

as the friends of out-patients of hospitals and dispensaries, as well as others, often get certificates to which they are not entitled through the kindness of the medical officers, who have sometimes no means of identification or verification. In all such cases, and in every case of death without medical attendance up to the date of death, in which the certificate could not be obtained from a legally qualified medical attendant—an informant, or the occupier of the house, or in his default an inmate, should be bound to give notice to a medical officer specially appointed for the duty in each of the districts of the kingdom. The *registration medical officer* would thereupon visit the body, and if all was clear, and admitted of satisfactory determination, send his medical certificate of the probable cause of death by the informant or by post to the registrar, who would upon its receipt register the death, and issue his certificate for burial in the usual course. The *registration medical officer* would, if the case was enveloped in any suspicion or obscurity, refuse his certificate until an inquest had been held or refused by the coroner, whose inquiry should by no means be superseded. The *registration medical officer* should be specially qualified to conduct *post-mortem* examination, and, on being summoned, might appear as the medical witness at the inquest. By practice he would acquire aptitude in the investigation of the obscurer causes of death, and in the detection of crime. Under this system every death, and the cause of every death, would be certified; and poisonings and criminal attempts on the life of children or adults would be less frequent, as they would with difficulty escape detection. Expected impunity would not invite men or women into the commission of fearful crimes. And human life would be under a new safeguard.

It is necessary to alter slightly on the above plan the present form of medical certificate, and three specimens of the requisite altered forms are subjoined. If the still-born deaths are to be certified, a special form would be required.

To the REGISTRAR of the SUB-DISTRICT in which the DEATH took place.

I hereby certify that I attended John Jones, carpenter, *aged* 21 years *last birthday; that I* saw him alive on January 11th, 1866; *that he died* on that day, at 7, King Street, Marylebone; *and that the cause of his death was—*

	Cause of Death. (In case of Autopsy write P.M.)	*Time from Attack till Death.*	*Certified by—* Edward Lawrence. *Profl Title,* M.D. *Address,* 37, Soho Square. *Date,* January 13th, 1866.
(*a*) First.	Typhus - -	19 days.*	
(*b*) Second.	Pneumonia, P.M.	3 days.*	

To the REGISTRAR of the SUB-DISTRICT in which the DEATH took place.

I hereby certify that I attended Jonathan Williams, aged 32 years *last birthday; that I* saw his body on January 26th, 1866; *that he died* on January 24th, at 211, Oxford Street; *and that the cause of his death was—*

	Cause of Death. (In case of Autopsy write P.M.)	*Time from Attack till Death.*	*Certified by—* Robert Wilson. *Profl Title,* M.R.C.S. *Address,* 19, Duke-Street, W. *Date,* January 28th, 1866.
(*a*) First	Small-pox (confluent) (first attack).	21 days.	
(*b*) Second.	Not vaccinated.		

To the REGISTRAR of the SUB-DISTRICT in which the DEATH took place.

I hereby certify that I visited the body of Richard Johnson, a mason, aged 25 years *last birthday*, on March 21st, 1866; *that he died* on March 19th, at 19, Waterloo Road, S.; *and that the cause of his death was—*

	Cause of Death. (In case of Autopsy write P.M.)	*Time from Attack till Death.*	*Certified by—* Robert Jackson. *Profl Title,* M.R.C.S., REGISTRATION MEDICAL OFFICER. *Address,* West Sq., Lambeth. *Date,* March 22nd, 1866.
(*a*) First (*b*) Second.	Phthisis - -	3 years.	

The registrar invariably to write "certified by" in his register book, adding the name and title, and if out of the district the address of the medical attendant or of the registration medical officer, as the case may be. The registrar to file the certificates, and to produce them for examination with the certified copies by the superintendent registrar, who would certify the accuracy of the copied entry of the cause of death.

It would increase the value of the evidence if the certifying physician himself signed the entry in the register. But this would be a complication; it would increase the expense, give much trouble, and produce delay, so that I do not propose it. It was tried in the case of the coroners, and failed.

The advantages of the proposed amendments may be briefly enumerated:

(1.) The *cause of death* would in all cases be certified by one professional witness, and would be recorded as correctly as is practicable in the present state of science.

(2.) The fact that a given person died at a given place would be attested by the informant as at present, and the evidence would be enormously strengthened by an educated witness. While so large a portion of our informants cannot even write their names, this is of great importance.

(3.) Secret murders and attempts on life, and deaths of children, or of old people, from neglect, could rarely escape detection; they would, other things being equal, be less frequent than they have been in past times. Life would become more secure. The public solicitude, like a Providence watching over all, would cherish the reverence of all classes for human life.

(4.) The frauds of informants would be less common, and no registrar would again manufacture fictitious entries, thereby throwing discredit on the whole of the *national registers*.

(5.) Much trouble would be saved to the public, who are now put to expense in getting corroborative certificates, as it is felt that the present certified copy of an entry is most imperfect evidence of the death and identity of deceased persons.*

(6.) The registration medical officer visiting the dwellings of people in unfavourable sanitary conditions would discover and point out the consequences of those conditions to the families themselves, and to the authorities in seasons of cholera, of fever, or other epidemics. The authorities would find it convenient to make him the health officer of the district; and often where such an officer already exists he might discharge the medical registration duties. The Post Office would employ the registration medical officer in insurance business, and so would insurance offices, to whom he could render essential service in putting a stop to the numerous frauds which are every day committed at their expense.

You have appointed two *inspectors* with great advantage, as they instruct registrars, and inspect the books on the

* Each form of disease, or symptom, is reckoned from its commencement *till* death.

N.B.—This certificate is intended solely for the use of THE REGISTRAR, to whom it should be delivered by the person giving information to him of the particulars required by law to be registered concerning the death.

Note.—(1.) The certificate of death should be procured from the MEDICAL ATTENDANT who has either seen the deceased on the day of death or has afterwards seen the body. In the absence of such certificate the body must be inspected and the certificate be given by the REGISTRATION MEDICAL OFFICER of the district or by the CORONER.

(2.) The registrar will in all cases register the name of the medical man who signs the certificate.

(3.) No death can be registered and no burial take place until the death is certified.

The persons who are qualified to act as informants, and to sign the register as such, are:—

(1.) Some relative or other person *present at the death.*

(2.) Some person *in attendance* during the last illness of the deceased;
Or, in case of the death, illness, inability, or default of all such persons,

(3.) The *occupier* of the house or premises;
Or, if the occupier be the person who shall have died,

(4.) Some *inmate* of the house in which the death shall have happened.

* The following letter supplies an illustration of the expense and trouble to the public to which imperfections of registration give rise:—

Astwood Bank, Bromsgrove, May 22d, 1866.

Sir,

A sum of money is invested in the 3 per cents. in the names of trustees. The survivor wishes to effect a transfer. The directors of the Bank of England refuse to receive any certificate but that of burial. These have been forwarded, but now returned with a printed form of declaration to be made before a magistrate that these certificates have been compared with the register book of the cemeteries, and are found a true and faithful copy. This must be done by some one who personally knew the deceased.

This will occasion us considerable *trouble and expense*, as we shall have to send a person a long distance. I always understood a certified copy of the register of death bearing the seal of the office was to be received in law without any further proof.

* * * * * *

(Signed) JOHN PHILLIPS, Baptist Minister.

To mention a case of fraud:—In November 1844, Elizabeth Mason, married, residing at Walsall, registered the pretended death of her brother, John Hodson, and by means of the certified copy of the register obtained from the executors of one Drinkwater payment of a legacy which, by his will, he had bequeathed to John Hodson on his attaining 21, and to the said Elizabeth Mason in the event of *Hodson dying under that age.* In February 1848 Hodson appeared and claimed the legacy which had been received by Elizabeth Mason. She was tried and convicted at Stafford Lent Assizes, 1848.

spot in periodical visits. But they proceed no further than the books; and, unless the books themselves supply evidence of inaccuracy, no inaccuracy is discovered. They do not institute any comparison between the actual or the ascertainable facts and the records of those facts. Here many errors must occur. At this office no important work is allowed to pass unchecked; and after selecting the clearest headed men, the calculations are all made in duplicate, and carefully compared. Experience has shown that this is necessary to ensure accuracy. It provides against errors of human fallibility, and errors of negligence. Now the registration records need not be made in duplicate by two separate officers and compared; but by periodical inquiries into the actual facts of *cases where the informants sign with marks* every registrar would work under a sense of responsibility, and would do his work better than he does it now. I beg to suggest that you should be allowed to appoint an inspector to be especially employed on this duty, with a medical inspector to be especially employed in looking after the registration of the causes of death in such districts as you might be pleased to direct.

Medical men have to learn the difficult duty of returning fatal diseases on a uniform system and under the same names. Their attention might be called in a friendly way to any imperfections in their returns. This is found to work well in Geneva, where it was performed for many years by my friend Dr. Marc d'Espine with the best possible result, both in the interests of science and of justice.

This improvement in our system of registration would be quite in accordance with English habits, which must ever be religiously respected in a matter so solemn as death. The public medical officer would only intervene when the family had no physician in attendance, and wherever he attended it would be confidentially, for the comfort and satisfaction alike of friends and of the community.

This system, I submit, would be more efficacious than the registration now in use in France, where the death can be registered by declaration, without assigning the cause of death. The inspection of the body by the *Officier de l'état civil* would be superseded by the certificate of the medical attendant, or of the registration medical officer; the inquiry into the cause of death would be universal; and the evidence of the certificate of registry would be valid. The French explicitly reject women as informants,* and thus must in many cases forego the best possible testimony. Women are as truthful as men; and their evidence is as trustworthy where they have equal opportunities for the observation of facts within the scope of their knowledge.† Women are almost always, except on the field of battle, in attendance or present at death. The wife does not forsake the husband, the mother the child, in the last moments. In marriage and in birth, the two great acts of registration, the woman is indissolubly associated with the other sex, and from men in death they are not divided. On what ground then is the woman rejected peremptorily as a witness? The French principle is inapplicable to English women. But in England we may well avoid rushing to the other extreme. Why should a majority of the informants of some districts be ignorant women who sign the registers with marks, and cannot read and check the entry to which their signature is attached in the national records? ‡ The medical certificate is indispensable under such circumstances.

The improvements in registration cannot be carried out without expense. The medical certificate will cost the public from *a florin* to *a guinea* an entry; only the portion of the pay for the registration medical officer and for inspectors will come out of poor rate and out of consolidated fund. It is desirable to make the fee of the registration officer sufficiently high to command the services of a good class of the profession; and the tariff must, therefore, necessarily vary in country and town districts with the distances to be travelled, and the variable local medical charges. The fixing of the fee might be left to you, subject to the approval of the Treasury. The cost of registration medical officers and of inspectors would not exceed in the aggregate 50,000*l.**

If we compare this sum, and the value of the services for which it is to be paid, with the costs of inquests and the cost of funerals, it does not appear to be great or extravagant.

The cost of registering the particulars and the causes of the deaths of the 495,531 persons who died in England and Wales was about 41,350*l.* in the year 1864; in 1867, under the improved plan, it would be about 91,350*l.*† Instead of 1*s.* 8*d.* it would be about 3*s.* 8*d.* on each death. This sum would be amply recouped in the additional security to life and property. It is computed from the legacy duty returns on 495,531 deaths that about 93,500,000*l.* passes by death to successors. On this sum 92,000*l.* is less than a farthing in the 1*l.* (See Registrar-General's 22d Report, p. l.)

The coroners of counties and boroughs held inquests on 24,787 bodies, at a total cost, including coroners' salaries, travelling expenses, and medical witnesses, of 72,598*l.* This sum is paid out of the rates. It amounts on an average to 2*l.* 18*s.* 7*d.* on each inquest. The jurymen are not paid for their services, but they are summoned, and if they do not attend render themselves liable to a penalty. The value of their time cannot be estimated at less than 1*l.* 5*s.* 5*d.* This will make the cost of an inquest four guineas, or 24,787 inquests cost 104,105*l.* in the year. The value of this ancient institution cannot be questioned, but the inconvenience and cost to families left out of account in this estimate is not inconsiderable.

If the inquiry by inquest had been extended to the whole of the deaths, the cost in coroners and in medical witnesses only in the year 1864 would have amounted to 1,451,345*l.*, without allowing anything for the time lost by jurymen, and for the inconvenience of families.

The cost of 66,748 funerals in the metropolis was estimated by Mr. Chadwick‡ for the year 1839 at 626,604*l.*; and his "proximate estimate of the expense for the total "number of funerals in England and Wales," was 4,871,493*l.* He shows that the expense of pauper funerals in London was 13*s.*, of artizans 5*l.*, tradesmen of second class, &c., 27*l.* 10*s.*, tradesmen of first class 50*l.*, gentry and the higher classes of people 100*l.*; while the expenditure on the funerals of children under 10 years of age of the corresponding classes, excluding paupers, ranged from 30*s.* to 30*l.* The average cost of funerals of persons of every rank above paupers in London he takes at 14*l.* 19*s.* 9*d.*, and including paupers at rather less than 10*l.* I am aware that the cost of funerals of persons of rank runs up to 1,000*l.* or 1,500*l.*, and that workmen's clubs pay commonly 10*l.* for burial, but I am disposed to think that Mr. Chadwick's estimate is too high for the whole population, in town and country. Instead of his figures I take the average cost at 6*l.*, and then the amount that the nation expends annually on the burial of its dead is 2,973,186*l.* This includes only expenses that figure in undertakers' bills. It neither comprises the extra cost of mourning, nor the expenditure in memory of the dead on monuments, or friable stones, which will be obliterated or crumbled into dust long ere the national lists of the dead in the custody of the State have perished.§

* Code Civil, livre 1, sec. 37.: Les témoins produits aux actes de l'état civil ne pourront être que du sexe masculin agés de vingt-un aux moins et ils seront choisis par les personnes intéressées.

† Criminal returns of England, 1864. The number of men committed for *forging* and *uttering forged* instruments was 140, of women 4; for uttering and having in possession counterfeit coin, 330 men, 98 women, were committed in the same year.

‡ Number and Proportions per cent. of Persons who were Informants of Deaths, and of Persons married, who signed the register with Marks in 11 Districts or Sub-districts of England and Wales in a portion of the year 1864.

	Informants at Death (exclusive of Coroners and Informants in Institutions).			Persons Married.		
	Total Number of Deaths.	Informants signing with Marks.	Proportion per cent. signing with Marks.	Total Number.	Number signing with Marks.	Proportion per cent. signing with Marks.
Persons - -	3,196	1,537	48	10,864	2,902	27
Males - -	1,208	312	26	5,432	1,142	21
Females - -	1,988	1,225	62	5,432	1,760	32

The facts are compiled from the registers of the districts of Chelsea, Reading, Peterborough, Romford, Highworth, Rugby, Derby, Halifax, Durham, and Carnarvon, and the sub-district of St. Martin, Liverpool. Of 100 informants, 38 were males and 62 were females.

Note.—Exclusive of coroners and informants of institutions, of 1,217 informants at death in the county of Northampton, 181 were men, of whom 52 signed with marks, and 1,036 were women, of whom 784 signed with marks. Of 1,843 persons married, 447 men and 499 women signed with marks, or of 100 *informants at death* 69 *signed with marks*, and of 100 persons married 26 *signed with marks*. The ignorance of the informants at death was to the ignorance of the ordinary run of people marrying in Northamptonshire as 69 to 26. Of 100 informants, 15 were males and 85 were females.

* Take the annual deaths at 500,000, and the uncertified cases in the proportions above given as 17 per cent., then 85,000 cases would be visited annually. The cases would be almost exclusively in the poorer classes, and at 10*s.* each the cost would be 42,500*l.*

† I have not brought into account the cost of the apartments in which the records are kept at Somerset House. The conservation of inaccurate documents, it is worthy of note, is as costly as the custody of the most authentic records; and the State in the former case is in the condition of a bird wasting its care on addled eggs.

‡ Supplementary Report on the Results of a Special Inquiry into the Practice of Interment in Towns, by Edwin Chadwick, Esq., pp. 70-1.

§ The expense of an inscription on a common tombstone has been estimated by Mr. Wyatt, the Superintendent Registrar of Islington, as below. It far exceeds the cost of the most efficient and authentic registration of all the essential dates and facts of a man's birth, marriage, and death.

Sacred to the memory of William Matthews, of this parish, died 25th December 1865, in the 72nd year of his age. 84 letters at 3*d.* each — 1*l.* 1*s.*

I think it will be about the average to take 3*d.* per letter for engraving and painting on tombstones, as it is sometimes done as low as 10*s.* per 100 letters, if the tombstone has been erected by the same mason. The engraving on marble or granite is very expensive. [As

It is well to attach solemnity to funerals, but no one can doubt that it would be wiser on the part of the nation to give a florin or a guinea as a fee to a registration medical officer for the benefit of the living and of generations to come than to squander guineas lavishly on stones, or on lids of feathers, rich silk bands, porters, pages, feathermen,* and mutes.

The registration medical officer would stand in nearly the same relation to you, who direct the inquiry into the cause of death for the purposes of registration, as the medical witness stands (under 6 & 7 Will. 4. c. 89) to the coroner, but it might be desirable to leave his first appointment, and pay to the same bodies as appoint the registrars and superintendent registrars, subject to your approval, and to such rules as you may lay down as to qualification.

Sir, I submit these considerations to you with confidence, as it will be admitted generally that you have administered the present Registration Act so as to make it in its imperfect state useful as regards public health, as regards life, as regards the science of insurance, and as regards the collection of evidence affecting the transmission of names, titles, and property to successive generations. Far from justifying inaction, it is a ground for further improvement. Your great experience will give Her Majesty's Government confidence in any useful measure you suggest for rendering the national records worthy of England, and I know that it will be a satisfaction to you not only to have administered but to have perfected the law.

Satisfaction in good work was pronounced by the inventor of the word "statistics" to be characteristic of the English workman,† and I trust that I may without presumption say that while the department of which you are the chief shares the feeling, it is anxious to deserve Achenwall's praise of the English workman.

The following is an analysis of the particulars of which evidence is found in the death registers. I take the example given in the schedule:

1. That a person is dead.
2. That the name of that person is—*William Green.*
3. That the said person died at a certain date—*at 5 o'clock, 4th February* 1865.
4. That the said person died in a certain place—31, *Strand, London.*
5. That the said person was by profession—*a carpenter.*

> *Note.*—All these particulars are recorded on the evidence of the informant, who, if he has witnessed the death, bears direct testimony to particulars 1, 3, 4; the testimony as to 2 and 5 may be direct or indirect. If he was merely in attendance, and has not seen the body, all the evidence is indirect. He gets it at second hand.

6. That the said person was a male or a female—*Male.*
7. That the said person was of the age—43.

Of the *sex* and *age* the evidence is always indirect; it would be strengthened, as would all the other evidence, by the production of the certificate of birth at the time of the registry of death.

8. That the *cause of death* of said person was—*small-pox.*

> *Note.*—Sometimes the cause of death is easily distinguished by unskilled observers; in others it can be discovered after death by a skilful inspector from the testimony of surrounding persons; in others it can only be distinguished by medical men who have observed the symptoms during life. In many obscure cases inspection of internal organs (autopsy) and chemical analysis are required to enable the medical expert to divine the cause of death. In some cases, particularly of infants and old people, the cause of death cannot be discovered in the present state of medical science.

9. That the signature, description, and residence of informant was—*Rebecca Green, Widow, 17, North-street, Marylebone.*

> *Note.*—Under "Description," when *in attendance* is added, it would be well to add "nurse," "wife," "mother," &c. &c., and the profession of informant. So also when "present at death." This concludes the information; the two other columns relate to the registrar.

10. That the registrar registered the said particulars on a given day—*5th February.*
11. Witness, his name and title—*John Cox, Registrar.*

It would tend very much to promote the accuracy of registration if every family kept a register of births, marriages, and deaths. The register in the family Bible has often been found of great use, and the family register would be good corroborative evidence, although it would not, even when preserved, supersede the official register by a public officer.* I found on trial that in London many particulars respecting the great majority of the deceased, except in public institutions, are known to the people around them at death.† The following is one among many instances. It is a specimen of what I held then and still think would be a complete schedule. If it be ever adopted it will be necessary to pay the Registrar 1*s.* 6*d.* instead of 1*s.* an entry, and the superintendent 3*d.* instead of 2*d.* for examination, as the labour will be increased. It is evident that the additional particulars as to birth-place, residence in district, parents' names, marriage, and issue would have the same value as some of the particulars now registered; they would depend on indirect evidence, and, if required, every year such evidence would increase in value:—

District, *Poplar.*—*William Canty, male, aged* 62, *died* 28*th February, at half-past six o'clock a.m., at* 16, *Cottage Row, of Pneumonia,* 2 *months, as certified by H. Bloomfield, M.D.; born in Cork, Ireland;* 36 *years in Poplar; father Timothy Canty, deceased, mother Mary Canty, maiden name Nicolas, deceased; married in Scrill parish, Ireland, at age* 22, *to Honora M'Carty; left issue Timothy, age* 31, *William* 30, *Mary* 20, *John deceased, age* 27 *in* 1846, *Catherine deceased, age* 1 *in* 1820, *Stephen* 21; witness, *Honora Canty* her × mark, *widow,* Informant; *Mary Canty, daughter,* witness; *T. W. Gagen,* Registrar, *March* 3, 1847.

I do not venture to complicate the proposal as to the medical registration certificate with these or any other alterations of the schedule and the Act, as I know that you are better able than I am to deal with such general improvements.

To secure the registration of the causes of death it would be necessary to alter some clauses of the Act (6 & 7 W. 4. c. 86), and to insert a new clause to the following effect. It is slightly altered from the Registration Act for Ireland (26 Vict. c. 11. s. 46).

"Medical Certificate of Death.

"Whereas it is expedient to establish an authentic registration of the causes of death: be it therefore enacted, the registrar shall furnish from time to time, *gratis,* to every duly qualified medical practitioner within his district

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As one stone may record the deaths of four or five persons, I consider it would be a fair estimate to set down:—

For tombstone	1*l.* 1*s.*	for each person.
„ engraving same	1*l.* 1*s.*	
	2*l.* 2*s.*	G. Wyatt.

Gravestones endure a very variable time; Sir Thomas Brown (Urn Burial) sets down the time they stand at 40 years. There are paper registers in this office dating from 1567 in excellent condition. I annex two extracts from the register of French Protestants at Southampton.

Extracts translated by Mr. Shoveller from the register of the French church at Southampton, now in the custody of the Registrar General.

James de Cean de Valencienne was buried on the 26th of November 1567.

Phelippe de St. Legrer from France was buried in the said place, outside the church, the 21st day of January one thousand five hundred and sixty-nine.

Bernard Matien, a lad, native of Bordeaux in France, and abandoned by his father (and through poverty), at the house of William Hersens, died the 10th day of April 1573, and was buried in the evening of the same day.

In the same register is recorded (25th September 1572), a fast on account both of the persecutions by the Duke of Alva in the Netherlands, and the massacre on St. Bartholomew's day (24th August 1572). On the occasion of her visit to Southampton, 4th September 1591, these persecuted Protestants heard from Queen Elizabeth consolatory words, which they record with gratitude.

Mr. Rickman made a special inquiry into the parish registers existing at the date of the Census, A.D. 1831.[a] The result of this inquiry is thus stated.

[a] Population of Great Britain, 1831. Preface to Enumeration Abstract, vol. I., p. xxix.

"No person will be surprised that one-half of the registers anterior to "A.D. 1600 should have disappeared. If any other nation possesses similar "registers of that date (a valuable proof of uninterrupted civilization), a comparison might be instituted, and the preservation of such records through "three hundred years would not prove to have been of frequent occurrence; "but in point of fact examination shows that 812 English parish registers "commence in the year 1538, about 40 of which contain entries (copied probably from family bibles and tombstones) anterior to the date of Cromwell's "injunction; 1822 parish registers commence from A.D. 1538 to 1558, when "Queen Elizabeth required a protestation from the clergy; 2448 parish "registers commence from A.D. 1558 to 1603, when the canons authorized by "King James directed a copy of all extant parish registers to be made and "preserved, and nearly one half of them (5082) have been preserved accordingly, and are now extant. Parish registers, to the number of 969, commence between that time to the year 1650; 2737 from A.D. 1650 to 1700; "1476 parish registers from A.D. 1700 to the year 1750; the rest (six or seven "hundred) since that time."

How many tombstones of these earlier dates existed in the churchyards when Mr. Rickman wrote?

Without these registers, some of the dates of the birth, marriage, and death of some of the greatest men the country has produced—Shakespeare for instance—could not be determined.

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* See examples of ordinary undertakers' bills in Mr. Chadwick's Report to Sir James Graham, Her Majesty's Principal Secretary of State for the Home Department. 1843. pp. 287-9.

† The Englishman is the best workman in the world, for he works so as to satisfy his own mind, and always gives his work that degree of perfection which he has once learnt to appreciate and attain; and as the Frenchman seeks to enhance the value of his manufactures by all kinds of external ornament, so the Englishman seeks to give his productions in exactitude, usefulness, and durability a less fleeting worth.[a]

[a] Statsverfassung der heutigen vornehmsten Europaischen Reiche und Völker im Grundrisse von Gottfried Achenwall Weyland, Hofrath und Profrssor der Rechte nnd der Politik zu Göttingen. 1781. (p. 324.)

* Entries in a family Bible are admissible in evidence in matters of pedigree; they are considered to derive credit from the circumstance of their being entered in a book which is kept as the ordinary register of families, and on account of their publicity in the family. (By Lord Ellenborough, C.J., and Lord Redesdale, C., in the Berkeley Peerage Case, 4 Camp. 421; and see other authorities cited in the text books on the Law of Evidence.)

† See Journal of Statistical Society, Vol XI., pp. 282-5.

the necessary forms of certificates of death in the form (—) hereunto annexed, which certificates the registrar general shall cause to be printed and forwarded from time to time to every registrar for that purpose; and the medical practitioner who shall have been in attendance during the last il ness and until the death of any person dying after the 31st December 1866 shall within three days after the death of such person transmit to the registrar of the district in which the death occurred, or deliver to the relatives of the deceased, or to a person legally qualified to sign the register as informant of the death, a certificate of the cause of death in the form mentioned, the particulars of which shall be entered by the registrar in the register. In case such certificate shall not be so transmitted or delivered, the registrar shall give notice of the death to the registration medical officer, who shall within two days after the receipt thereof return a certificate duly filled up to such registrar, who shall enter the particulars relating to the cause of death in the proper column of the death register; provided that the registration medical officer shall, if he see fit, refuse to give his certificate until an inquest has been held."

Certain amendments would be required in the Act to secure the complete registration of deaths. The task of giving notice of death to the registrar, and in the case of deaths without medical attendance to the registration medical officer, should be enforced by penalty (see sect. 38 of 17 & 18 Vict. cap. 80, Scotch Act), so as to make it the duty of the parties concerned to procure from the medical attendant, or in his default forthwith from the registration medical officer, the certificate of the cause of death authorizing the issue of the burial certificate by the registrar. It is evident that if the body can be interred before the inquiry, it will open a door to crime by rendering detection difficult if not impossible. The body is seen at once and is often buried in France on the second day; in England the people cling to the presence of their dead, and thus inquiry is easier. Decent dead-houses should be provided for poor families in towns.

Still-born children should be seen by the registration medical officer, whose certificate to the effect that they were still-born would authorize their burial without funeral rites. They would be entered in his books, and would not appear in the registrar's accounts, which should embrace only all those born alive.

(9.) Extract from the Appendix to the Registrar-General's 30th Annual Report, 1869, (Wm. Farr, Esq., M.D., F.R.S.)

See Question 4457.

What are Causes of Death.

The human organism, although the force with which it is animated is indestructible, dies inevitably under a great variety of conditions. In one instance death is the direct effect of mechanical violence; a mere shock of arrested motion converts the life force into a new form: in another instance blood is lost and the processes of nutrition are stayed: then agents like fire or frost disintegrate the parts, or chemical forces like opium still for ever the living action in sleep. Submersion under water or stoppage of the air-ways shuts out oxygen, and with the cessation of the supply of this element life is extinguished as suddenly as the light of a lamp; so also life slowly goes out when the supply of food is insufficient, as the flame of a lamp dies when oil is withheld.

Adverse living molecular forms too assert their powers over the structure, and, as in small-pox, syphilis, glanders, cholera, and the other zymotic diseases, transform the body into their own substance and habitation, so that it can live no longer its own life, but is transformed first into multitudes of organic particles, and then mayhap, after many transmutations, into air, water, and earth. What was a living nature of the highest form becomes a dull cloud of matter, again after cycles of changes to be incarnated.

The constitution of the tissues undergoes transformations in cancer and tubercle and other analogous diseases, as the blood does apparently in diabetes.

The most common form of disease is inflammation and its results in the several organs of which the body is a confederation; and upon taking up these organs singly each is found to have its well-characterized diseases: the brain, no longer the seat of intelligence, sensibility, and reason, becomes the seat of madness; the heart loses its wonderful hydraulic precision; the lungs neither drink up nor discharge breath; the stomach transmutes its aliments no longer, or transmutes them amiss; the liver and the kidneys fail to supply their specific distillations; the joints decay; the muscular system, once finely adjusted in its movements, is paralysed; the skin loses its fresh colour, and changes into ulcer and leprosy. The formative forces in some cases go wrong, or stop and leave organs unfinished. The reproductive system, too, which creates and perpetuates generations in endless succession, itself kills the parent and the child in one flood—one throe of agony.

Now, when it is considered how multitudinous and complex the causes are, not of the one phenomenon, but of the many phenomena of death, for death has its many phases as well as life, it can scarcely be surprising to find that out of nearly half a million of deaths no causes were assigned in 8,000 or more instances. In 4,630 cases no causes were specified; in 3,506 cases it is only inferred that the deaths were sudden, as in them inquests were usually held.

Through the co-operation of the medical practitioners of England and Wales the majority of cases are certified on forms supplied by the Registrar General. In London about 93 per cent. of the deaths are certified, as far as the causes are concerned, by the medical attendants, five by the coroners, leaving only two in 100 uncertified. Out of 1,578 deaths in London recently analyzed 26 were uncertified, of which four only are recorded where the deceased had no medical attendant. One of the counties, Northampton, taken at hazard, yielded this result: out of every 100 deaths 91 were certified, seven were uncertified; two died without medical attendance. In some few counties many of the people get no qualified medical advice during life; the medical man lives at great distances, or the people, ignorant themselves, apply for relief to irregular practitioners, men sometimes of natural ability, but often possessing no claim to confidence, except that founded on boundless faith in their own nostrums, which perform the same amazing miracles now as were performed in the dark ages by relics, charms, and exorcisms.

It must be stated, moreover, that the causes of death assigned are often inadequate, and frequently erroneous. A person is dead. What was the cause of his death? is the question addressed to the medical attendant. He has all the information to guide him in his answer that he employed during life in the treatment; but that may be insufficient. Some few years ago "dropsy" would have been returned, and was accepted in medical science as a disease, a cause of death. It is still used rightly in some cases. But many cases are traced back further; the dropsy is found (1) to be associated with albuminous urine, and affections of the kidney, such as Bright's disease; or (2) it is the result of retarded circulation from organic disease of the heart; or (3) it is *ascites*, an effusion into the peritoneal sac from obstructed circulation through the liver; or (4) it is hydrocele, perhaps from injury; or (5) it is ovarian dropsy; or (6) it is a consequence of scarlet fever; or (7) it is anæmic; or (8) it comes on suddenly with fever; or (9) it is general and associated with scurvy. Now after the first step is made in defining the seat and source of the "dropsy" we have got at one link of the chain of causes. The dropsy of scurvy, or anæmia, may be traced to famine, or to insufficiency of some elements of diet; that cause is primary. Then the scarlet fever is the cause of the dropsy; but what is the cause of the first disease? how was the dead child infected? Ascites, the cirrhosis of the liver, may be traced to alcoholism as its primary cause; or the heart disease may be derived from rheumatic fever. And the rheumatic fever may be the result of exposure to malaria of a specific kind. Now in many cases the primary cause can, but in many cases it cannot, be discovered. Yet to be able to prevent death the primary cause is of first importance, as it sets the rest in motion.

There are affections of the brain, of the chest, and of other internal parts, which can be distinguished by the pathologist on actual inspection, but not otherwise; while other fatal functional derangements cannot, under the most favourable conditions, in some cases, be connected with any changes in the material structure of organs, even with the help of the best available instruments.

Observers, with excellent intentions, are not always competent, or do not devote the required time to their investigations. Their means of observation are sometimes restricted; they only see the patient for a few moments in his last hours, or for a few minutes at a public dispensary; while from children the subjective symptoms cannot be gathered.

Where the organic injury is evident in the dead body and is the proximate cause of death, the inquiry after the first cause only commences. Thus a man is found dead in the road in blood, with a wound through his head; that was lethal; but with what instrument was the wound inflicted? A pistol. Who fired the pistol? The man now dead, or another man? Himself. Then was it an accident or a suicide? What were the motives of suicide? Another man. Is the manslayer a soldier fighting, or a duellist? or is he guilty of murder, manslaughter, or justifiable homicide?

In a railway accident the question "who is to blame?" involves "what was the cause," what were the circumstances of the overthrow or collision?

On inquiries into the causes of this class the great tribunals of European justice are occupied. To these causes of death by the violence or malice or recklessness of men importance is everywhere attached. But the causes of the whole deaths of a nation partially inquired into everywhere have nowhere been published, except in England. Your returns are at present, it is to be regretted, unique. And while they are avowedly incomplete, as the chain of causes is not always traced, and the true cause is sometimes mistaken, I hope to be able to show that the returns are of use in their imperfect state, that they require improvement in the present day, and that they are of incalculable interest to mankind.

It is true that 48,634 persons died at the age of 75 and upwards in the year, and thus attained advanced ages; 650 lived to the age of 95 and upwards; of whom 70 lived 100 years and upwards, which is the term of human life. But how fared it with the multitude? 134,187 persons died in ripe manhood at the age of 25 and under 65 years; while 242,325, under the age of 25, were cut off and perished in childhood and youth! Of the total recorded deaths only 392 were referred to homicide; and paramountly important as the deaths from this cause unquestionably are, occupying too so large a portion of our juridical force, and testifying as the reduced number does to law and police efficiency, it brings out with still greater force the magnitude of the sacrifices of life from other agencies. What these agencies are is assuredly well worth careful inquiry. Death is inevitable, but why is life cut short? Why do the people of England live only a mean lifetime of 41 years?

Biology includes in its sphere of research death, which like birth is common to man and to every living thing; so the extension of that science will shed light on the causes of death. The laws of life involve the laws of death; and every forward step of the biologist will open new fields in vital statistics. In the meantime the existing knowledge admits of so many practicable applications as to justify us in asking for its extension by all the means of accurate observation. It places at the disposal of men now an incalculable control over the duration and happiness of their lives; and it opens to the future a prospect of discovering not indeed elixirs of life, not secrets of earthly immortality to any individual, but protection against many of the dangers which beset the human race.

Science will naturally advance, and the extension of skilful practitioners to the remoter parts of the country will supply good observers. To them we must trust. Where death happens in such circumstances as render it impossible to obtain a satisfactory certificate from a medical man in attendance, the cause, I submit, in the interests of science and of human safety should be investigated by a medical officer specially appointed in each registration district.*

One important step has been taken by a committee nominated by the Royal College of Physicians, who have drawn up a complete nomenclature of the pathological causes of death. This will be distributed among the practitioners of the United Kingdom, and will thus facilitate the identification of that great class of causes. Synonymes are given in the Latin, French, Italian, and German languages.

(10.) Memorandum as to Drainage and Water Supply for small Towns, Villages, and Rural Districts, (John Bailey Denton, Esq.)

See Question 4867.

Any general code of sanitary byelaws should apply to all towns and villages, and should set forth where the combined action of a community for sanitary works shall commence and the individual action of private owners cease.

Combined action should extend to districts comprising several towns and villages, where the cost would be reduced by such combination, and it should be left to the determination of the central local authorities whether such united districts should exist or not.

The code should include regulations as to the minimum accommodation to be afforded in the dwellings of the labouring classes in both "towns" and "villages," and should specify the size (breathing spaces) of living and sleeping rooms. On the ground floors of all new buildings there should be one room at least with a boarded floor, and all walls should be built with a damp course above the ground line, to prevent the rising of moisture within the walls above ground.

All local executive authorities should be compelled to provide a public water supply, at constant service, where it can be secured at a cost not exceeding 2*d.* per dwelling per week, and in case of inability to do this, pumps for general use or a stored supply to meet seasons of drought, should be provided,

A standard of purity of drinking water by chemical test should be given on Government authority, by which the local central authority could at all times determine whether the quality of supply is properly maintained by the executive.

In the absence of a public water supply the owners of all dwellings occupied by the labouring classes should be obliged to sink a well where spring water can be readily obtained, or to collect the rain from the roofs into underground tanks, where such may not be the case.

Where a constant supply of water or a certain provision during times of drought is secured at public expense, the owners of dwellings of the labouring classes should be compelled to lay on, at their private expense, the water from the public main, instead of sinking a private well or collecting the roof water in a private tank.

Every local executive authority in villages, as well as in towns, should be compelled to construct and maintain an underground sewer of a size to meet the requirements of the place to discharge all liquid refuse, and no open sewer should be permitted to exist between the point where dwellings commence and end.

The owners of existing as well as future dwellings of the labouring classes should be compelled to construct privies for the application of earth or water, and to discontinue the use of cesspits altogether, where, from their proximity of position or the porosity of the soil, neighbouring wells may become tainted by the percolation of sewage into them.

The owners of all dwellings occupied by the labouring classes should be obliged to connect the drainage of each dwelling with the common sewer, so that liquid refuse which must exist under any and all systems of sewage treatment, may go directly into it.

All public sewers should be perfectly ventilated by means distinct from street gulley holes, and should be periodically flushed.

A standard of quality (on Government authority) should be adopted as a test of all refuse liquid discharged into streams or ditches, and no effluent water from irrigated lands should pass into streams below the standard of quality.

All lands to be irrigated with sewage should be first under-drained, if not naturally drained; and in the case of small village populations the sewage should be devoted to gardens for the labouring poor, by some arrangement admitting of the land being irrigated for two or three years together, and growing rye grass and other sewage crops alternatively, with its use for the same period as garden land, to be cultivated by spade husbandry.

Lands irrigated, and burial grounds, should not be permitted to exist within a distance which will admit of the percolation of effluent water through the soil into wells.

All lands and grounds within the inhabited districts which are wet in the subsoil, should be perfectly underdrained, as a part of the sewerage system essential to health.

All turnpike roads and public roads in towns and villages under which sewers may be laid, should be placed under the control of the executive authority, and any difference between that authority and the surveyor of highways should be decided by the central local authority.

Special powers should be given to central local authorities, to deal with canals and railways which interfere with the drainage of towns and districts and with water supply.

Individual ratepayers should be enabled to lodge a formal complaint of nuisance with the inspector or acknowledged representative of the executive authority, who should be obliged to represent to such authority such complaint at once; and if no notice be taken of it within a fortnight of the time of making it, the complainant should be authorized to make direct application to the central local authority, who should then depute their own officer to investigate it.

The code should render the executive authorities liable to penalties for neglect of duty as severe as those against private individuals, who fail to remove a nuisance after notice to do so. It should also make the inspectors themselves liable to a small fine for neglect of complaint, if convicted before justices of such neglect; and all parties who are reported by the central local authority to have made an unjustifiable complaint should be made liable to a small fine, to be collected by the rate collector, and recoverable in the same way as parochial rates.

* See 27th Annual Report of Reg. Gen., App.

(11.) Correspondence as to Emigrants, (Wm. S. Trench, Esq., M.D.)

See Question 7819.

Gentlemen, Liverpool, May 31, 1869.

I am directed by the select vestry of this parish to direct your attention to the position in which intending emigrants are placed in when in consequence of their own health or the health of any member of their families they are rejected by the emigration officer at this port under the 45th Section of the Passengers Act, 1855.

At present, when a family is thus rejected upon account of infectious sickness, they are refused admission to the better conducted lodging houses for foreign emigrants, and are ordinarily sent direct to the workhouse; the agents, or the owners of the vessel in which they had embarked or were about to embark, undertaking to pay the cost of their maintenance therein. During the last 10 weeks, no fewer than 395 foreign emigrants have been received into the workhouse under the circumstances, and many others who had been brought to the workhouse gate under the impression that they were on their way to an hotel, refused to enter.

The select vestry are fully aware that in by far the great majority of these cases, the emigrants are not paupers in a legal sense, inasmuch as they have a claim which is readily admitted for detention money from the master of the ship, but they can only be refused admission to the workhouse at the risk of forcing them to take refuge in the lowest class of lodging-houses in the town, with the certainty of imperilling the health, if not the lives of the other inmates, dna of disseminating to an indefinite extent the seeds of disease in the most thickly populated district of the town.

Although it is true that no direct pecuniary loss results to the ratepayers in consequence of the reception of these cases into the workhouse, yet it is productive of very serious inconvenience. The workhouse has rarely sufficient accommodation to allow of their reception without interfering very prejudicially with the ordinary arrangements of the house, and it is found to be practically impossible to enforce amongst this class the regulations, classification and discipline which are found to be necessary in the management of an institution of some 3,000 inmates. Then as regards the emigrants themselves, it cannot be right that they should be subjected to the indignity of being sent to a pauper establishment; and to the incidental hardships and inconveniences which the taking of such a course involves.

The select vestry desire to urge upon the commissioners the necessity for some alteration in the law by which the responsibility of the parties primarily interested in the passenger traffic, instead of being as now limited to a payment of one shilling and sixpence per day as subsistence money, should, in such cases as that of Liverpool, be so extended as to compel them to provide suitable accommodation and treatment for such persons as have been induced by the representations of themselves or their agents to come here, and, when here, have been prevented by the Government officer from proceeding on their journey.

In connexion with this subject the select vestry direct me to point out to you also, that intending emigrants frequently reach Liverpool through the agency of the emigration houses, in whose cases the shipowners and masters disclaim all responsibility. The class referred to is that of persons whose passages are prepaid by their friends in America. When such cases are rejected by the emigration officer there is no alternative but to admit them to the workhouse, and occasionally they remain for a considerable period a burden upon the parish. In this respect also the law requires amendment.

The select vestry feeling that this state of things urgently demands a remedy, and believing that the difficulties surrounding the question admit of a practicable solution will be happy to send a deputation to place their views more fully before the Commissioners, should the Commissioners consider such a step desirable.

I have the honour to be, &c.
(Signed) H. J. Hagger.

The Colonial Land and Emigration Commissioners,
8, Park Place, Westminster.

Government Emigration Board,
2 Park Street, Westminster, S.W.

Sir, June 1, 1869.

I am directed by the Emigration Commissioners to acknowledge your letter of the 31st ultimo, conveying to them the views of the select vestry of Liverpool in respect to the operation of certain provisions of the existing Passengers Acts.

First, in respect to emigrants who are prevented by the emigration office from proceeding to their destination on account of sickness in themselves, or their families, you point out that the more respectable class of lodging-house keepers refuse to receive them, and that they have no choice, therefore, except between a low class of lodging-houses or the workhouse; that if they go to the former they run the risk of spreading disease in the most thickly populated parts of the the town, while if they are received into the latter, although no expense is thereby thrown on the ratepayers, yet that serious inconvenience is occasioned, both by the crowding of the house, and by the increased difficulty of enforcing discipline. The vestry, in consequence, propose that the law should be so altered as to compel those interested in the passenger traffic to provide suitable accommodation and treatment for emigrants, whose embarkation, the emigration officers are required by the 45th section of the Passengers Acts to prohibit.

It is, of course, unnecessary to say that the law as it at present stands, gives the commissioners no power in the matter, and that, even if it were decided that the proposed alteration were desirable, it would be impossible to obtain the necessary power during the present session. But the commissioners, without expressing any opinion on the abstract justice of the proposition, feel bound to add that they see great difficulty in giving it a practical shape.

If the law merely imposed the obligation on the ship owner or agents, without defining how it was to be carved out, the result would probably be that sick emigrant would be placed in existing lodging-houses and the dissemination of disease, the risk of which the vestry apprehend under the present system, would become certain. If a general hospital were proposed, it would be necessary to provide funds for its erection and maintenance for which the existing subsistence money would certainly not be sufficient. The commissioners do not see how such funds could be provided except by a tax on emigrants or emigrant ships; but they feel great doubt whether Parliament would be willing for that purpose to impose an exceptional tax on emigrants or emigrant ships proceeding from Liverpool, and, at all events, they can have no doubt that the shipowners of Liverpool, and probably the general community would strongly object to a measure the effect of which would be to divert emigration from that to other ports.

The commissioners think it unnecessary to advert to other difficulties connected with the management and discipline of such an establishment, although these would be by no means unimportant. The conclusion to which they come upon this subject is that, as at present advised, they do not see in what way the proposition of the select vestry could be carried out.

Second. In respect to those whose passages are prepaid in America, but who, when rejected by the emigration officer are thrown on the parish, and having no claim to detention money, require to be supported out of the rates, the Commissioners desire me to say that they are quite alive to their unsatisfactory position. But the difficulty of dealing with these cases arises from the fact that though the objects of the contract made for their passages, they are no parties to it, that the contracting parties are beyond the jurisdiction of this country, and that the contract is almost necessarily of an indefinite character. There is, therefore, not only the difficulty of proving the contract, and of fixing some person in the United Kingdom with its obligations, but if this could be done, of defining what those obligations are, as regards emigrants who engage their passages in this country all that is necessary is done by the contract ticket, but no similar ticket, nor as far as the commissioners know, anything beyond a mere acknowledgment of the payment of passage money is given for passages prepaid in America.

The commissioners have thought it right to explain fully the impediments to adopting the alterations of the law suggested by the select vestry of Liverpool; at the same time, if, as you intimate, the select vestry wish to send a deputation to confer with them on the subject they will be happy to receive such a deputation on any day you may fix between 12 and 4 o'clock.

I have, &c.
(Signed) Richd. B. Cooper,
Assistant Secretary.

H. J. Hagger, Esq.

RETURN concerning EMIGRANTS.

	12 years old and upwards.	Under 12 years of Age.
1. Number of emigrants admitted to Liverpool Workhouse, from 1st April to 8th June 1869.	181	294
2. Of the above number there were admitted as sick.	27	161
3. The number of emigrants (including sick) now in the workhouse is	*26	82
4. The number of emigrants now sick in the hospital is	*5	70

* N.B. Twelve emigrants now in Dr. Gee's hospital not included in either of these columns.

NUMBER of EMIGRANTS admitted to Workhouse from 1st April 1869 to 8th June 1869, showing the Firm to whom chargeable.

	12 years old and upwards.	Under 12 years of Age.
5. Messrs. D. C. MacIver & Co., Liverpool	14	22
6. Messrs. Guion & Co. ,,	8	11
7. Messrs. Allen Brothers & Co. ,,	73	143
8. The National Steamship Co. ,,	44	65
9. Messrs. Inman & Co. ,,	42	53
	181	294
Total - -	475	

APPENDIX III.

CIRCULAR QUESTIONS ISSUED BY THE COMMISSIONERS.

A.—QUESTIONS to be answered by the CHAIRMEN or CLERKS of LOCAL BOARDS constituted under the PUBLIC HEALTH ACT or the LOCAL GOVERNMENT ACT, and of IMPROVEMENT COMMISSIONERS, TRUSTEES, or other local authority under LOCAL ACTS for sanitary purposes.

1. What is the name or title of the local board or other local authority?
2. Of what parishes or places does the district consist?
3. Is the district conterminous with poor law parishes or townships?
4. What is the area in acres of the district?
5. The rateable value?
6. (*a*) The population?
(*b*) Number of houses in the district by last census? Any remarkable change in their number since 1861?
7. What has been the rate of mortality per thousand of the population during each of the last three years?
8. Does the district of your local government consist of a municipal borough?
Or of a place or places under improvement commissioners.
Or of a place or places not having defined boundaries before the application of the Act?
Or, if the district do not fall under any of the above heads, explain the nature of the district?
9. Has the Public Health Act or the Local Government Act, or any part, and if so, what part, been applied to the district?
10. Was the Act applied by Order in Council upon petition of the inhabitants, or by provisional order confirmed by Parliament, or by adoption under 12th section of 21 & 22 Vict. c. 98, or how otherwise; and has any provisional order been made respecting the district under 77th section of the same Act.
11. What is the date of (1) the application of the Act if wholly adopted, (2) of successive adoptions in case different parts have been adopted at different times?
12. If the local board is constituted under a Local Act, what is the date and title of the Act? (*Annex, if practicable, a copy of the Act, and any Acts amending the same.*)
13. What officers are employed by the local authority for any purposes in connexion with the execution or exercise of sanitary powers? State the name of each office, and the salary and the duties attached to each. Is there in your district a health officer? Was he appointed under the Artizans and Labourers Dwellings Acts, 1868? Does an inspector under the Factory Acts or the Workshops Act, 1867, act in your district? Does a certifying surgeon?
14. Does the local authority in any way receive advice and assistance in the discharge of sanitary duties from any medical source?
15. Is there any regular system of inspection of your district for the purpose of ascertaining unhealthiness or the reverse of its several parts?
16. Have you contributed from the rates to hospitals or erected them provisionally? If there is a hospital in your district, are infectious cases admitted readily; by payment or otherwise.
17. Have you any public disinfecting apparatus? Under what regulations is it used? Have you ever used any plan for disinfecting sewers? If so, what plan?
18. How are patients suffering under infectious diseases conveyed?
19. Are the powers for inspecting food efficient?
20. Is the coroner of your district also a sanitary officer or a medical practitioner, or originally educated as one?
21. Have the guardians obtained sanitary reports of their districts, and at what cost?
22. Has registration of *disease* been attempted?
23. What means exist for immediately ascertaining the presence of any epidemic disease in your district?
24. Do these means seem to you sufficient?
25. Is the information given respecting the existence of such disease immediately acted on?
26. Is any record made or published of (1) death, (2) disease which does not end in death, in any of the public institutions of your district?
27. If you have had any special outbreaks of disease since 1853, explain shortly the nature of the disease, and give the date. Had you any difficulty, legal or other, in meeting those outbreaks?
28. Are there any districts specially affected by fever, diarrhœa, rheumatism, or consumption, or in which cholera specially prevailed during its visitations in this country? If so, is the cause known?
29. Is the public sewerage and drainage of the district generally sufficient; and if not, in what respect is it deficient? Is the subsoil waterlogged, if so, is there power of draining? Can you restrain house-building on waterlogged soil, and, if so, what depth do you require the water to be from the lowest floor?
30. Explain the mode by which your sewers are ventilated. Are they or the house drains ventilated wholly or in part by rain pipes? Are—
(1.) The sewers,
(2.) The house drains, carefully trapped.
31. In what manner is the sewage disposed of,—by sale of the solid excrement to farmers, gardeners, and others; or by drainage into neighbouring stream, by irrigation with liquid sewage, or how otherwise? Has any change been made in your method; and have any legal or other difficulties been experienced in disposing of the sewage, or in carrying sewers or drains beyond the district, or through private property? If so, state the nature of such difficulties, and how, in your opinion, they may be removed.
32. What amount has been realized by the sale or disposal of the solid or liquid sewage during each of the last three years?
33. Are the houses generally supplied with waterclosets or privies capable of being flushed with water; or with cesspools, ashpits, earth closets, or earth privies? If cesspools or ashpits, are they deodorized, and how?
34. (1) Do the houses generally drain into the public sewers? (2) And if not, what proportion of the houses are still without the requisite means of communication?
35. (1) In what manner is the district supplied with

water? (2) If from a stream or river, does any drainage run into it above or at the point at which the water for use is drawn? (3) In case of there being a system of waterworks, is water laid on to each house, and is there a constant supply? (4) Is the rainfall utilized directly by (1) public reservoirs or (2) tanks or the like in private houses, and is the supply generally sufficient and of good quality?

36. Are there tenements in your district without water supply and needing it? And have the 76th section of the Public Health Act, 1848, and 51st section of the Local Government Act, 1858, been acted upon in correction of such cases; and have they been found sufficient or otherwise?

37. Have any works undertaken by the local authority been afterwards abandoned? If so, state why they were abandoned, and the amount of expenditure incurred in respect of them?

38. Have any works of water supply or drainage constructed by the local authority been found imperfectly constructed, and insufficient for the purpose for which they were intended. If so, what amount was expended upon them?

39. What powers are vested in the local authority for the regulation of streets or buildings, and are those powers sufficient? Do they refer exclusively to buildings constructed after a certain date, or do they affect all buildings? Are they actually exercised especially as regards drainage, ventilation, and other sanitary conditions of new houses?

40. Have you reason to believe that overcrowding has arisen from the operation of your building byelaws, &c., and consequently increased cost or scarcity of cottages?

41. Have any measures been taken by the local authority to prevent overcrowding in dwellings, and have those measures been successful?

42. What are the powers of the local authority with respect to the making of byelaws, and have you found any, and, if so, what difficulties in enforcing such byelaws.

43. Have any byelaws been made by the local authority defining or regulating the duties of the clerk or surveyor?

44. *Annex a copy of your byelaws.*

45. Have the existing powers for the abatement and removal of nuisances been found sufficient, and, if not, what further powers are needed?

46. Have any defects been found in the law with respect to enforcing the execution of private improvement works, and obtaining repayment for the outlay? If so, state the nature of such defects.

47. If extensive works have been undertaken and executed by the local board, has there been any marked improvement in the sanitary condition of the population? If so, state the grounds for arriving at this conclusion.

48. Has there been much, if any, local opposition to the execution of any public works by the local authority, and if so, to what works, and on what grounds?

49. Is there any district under a local board adjoining the district which might be advantageously incorporated with it? If so, state the reasons why such incorporation appears desirable?

50. Is there any populous place adjoining the district, and not under a local board, forming part of the town population of the district which ought to be annexed to it? If so, state the area, population, and rateable value of such place, and the reasons in favour of such annexation?

51. Have you any suggestion as to what should be the local authority for sanitary matters in neighbouring rural districts?

52. What is the total amount of local rates levied during each of the last three years, for which the accounts have been made up, specifying the total and the rate in the pound of each rate separately? viz.,

(*a.*) General district rate.
(*b.*) Special district rate.
(*c.*) Private improvement rates.
(*d.*) Water rates.
(*e.*) Gas rates (if any).
(*f.*) Other rates (not poor rates), if any, specifying them.

53. What have the poor rates amounted to in each of the same three years? What has been the rate in the pound for each of the three years?

54. How many separate rates for separate purposes are levied by the local authority?

55. What is the amount received by the local authority during the same period on account of loans and repayments for private improvement works?

56. What is the total amount of expenditure, and amount of work executed during the same period (viz. the last three years), under the following heads:—

(*a.*) Constructing and repairing sewers and drains.
(*b.*) Constructing streets and road.
(*c.*) Constructing works of water supply.
(*d.*) Constructing other public works.
(*e.*) Constructing private improvement works.
(*f.*) Salaries of officers.
(*g.*) Repayment of (1) principal on loans, (2) interest.
(*h.*) Law charges.
(*i.*) Other expenses.
(*k.*) Has any difficulty been experienced in making or levying the rates required for all or any of these purposes? If so, explain the nature of the difficulty.

57. What has been the entire expenditure for permanent works of water supply, and what districts (if any) beyond the boundaries of your district are thus supplied? Are the waterworks within the area under the jurisdiction of the local authority?

58. What is the extent of the borrowing powers possessed by the authority, and are they sufficient.

Have any legal or other difficulties been experienced in obtaining loans for the works executed and to be executed?

And has any reluctance been shown by the local authority in borrowing money in consequence of being unable to obtain the same at a low rate of interest.

59. What is the total amount borrowed by the local authority since its formation, specifying the amount of each loan, the purpose for which it was raised, and the rate of interest; and stating, also, whether the loan was obtained from the Public Works Loan Commissioners, from a public company, or from private persons?

60. By whom are the accounts of the local authority audited?

What is the amount which has been paid off in respect of each loan, and how much still remains due?

61. (*a.*) Has a sinking fund been established for repayment of any loans?

(*b.*) What is its present amount including interest?

(*c.*) On what securities is it invested, and at what rate of interest?

62. How far does the auditor reside from the district of the local authority, and what is the amount annually paid to him for his services and expenses?

63. How many surcharges or disallowances have been made by him during each of the last three years? State the total amount surcharged or disallowed in each year, and the number and total amount of such surcharges and disallowances reversed on appeal.

64. Have any defects not above mentioned been brought under your notice in carrying into execution the existing laws relating to public health in the district? If so, you are requested to specify such defects.

The Commissioners will feel much obliged if you will furnish them with any suggestions you may be able to offer for improving the present state of the law or the constitution of authorities with respect to any of the matters before referred to or, other matters affecting public health in your district.

B.—Questions to be answered by Officers of Local Authorities in Districts where there is not in operation the Public Health Act or the Local Government Act, nor any Local Act constituting Improvement Commissioners, Trustees, or other local authority.

1. What is the name or title of the local authority to which your answers refer?

2. Of what parishes or places does the district consist?

3. Is the district conterminous with poor law parishes or townships?

4. What is the area in acres of the district?

5. The rateable value?

6. (*a.*) The population?

(*b.*) Number of houses in the district by last census? Any remarkable change in their number since 1861?

7. If local rates other than poor rates have been levied, what is the total amount of such rates levied during each of the last three years, for which the accounts have been

made up, specifying the total and the rate in the pound of each rate separately? viz.,

(*a.*) Rates for constructing and repairing sewers and drains.
(*b.*) Private improvement rates.
(*c.*) Water rates.
(*d.*) Other rates, not poor rates, if any, specifying them.

8. What have the poor rates amounted to in each of the same three years? What has been the rate in the pound for each of the three years?

9. By whom are the accounts of the local authority audited?

10. How far does the auditor reside from the district of the local authority, and what is the amount annually paid to him for his services and expenses?

11. What is the total amount of expenditure, and amount of work executed during the same period (viz., each of the last three years), under any or all of the following heads:—

(*a.*) Constructing and repairing sewers and drains.
(*b.*) Constructing streets and road.
(*c.*) Constructing works of water supply.
(*e.*) Constructing private improvement works.
(*f.*) Salaries of officers.
(*g.*) Repayment of loans.
(*h.*) Law charges.
(*i.*) Other expenses.
(*k.*) Has any difficulty been experienced in making or levying the rates required for all or any of these purposes? If so, explain the nature of the difficulty.

12. What has been the rate of mortality per thousand of the population during each of the last three years?

13. What officers are employed by the local authority for any purposes in connexion with the execution or exercise of sanitary powers? State the name of each office, and the salary and the duties attached to each especially? Is there in your district a health officer? Does an inspector under the Factory Acts or the Workshops Act act in your district? Does a certifying surgeon?

14. Does the local authority in any way receive advice and assistance in the discharge of sanitary duties from any medical source?

15. Is there any regular system of inspection of your district for the purpose of ascertaining unhealthiness or the reverse of its several parts?

16. Have you contributed from the rates to hospitals or erected them provisionally? If there is a hospital in your district, are infectious cases admitted readily; by payment or otherwise?

17. Have you any public disinfecting apparatus? Under what regulations is it used? Have you ever used any plan for disinfecting sewers? If so, what plan?

18. How are patients suffering under infectious diseases conveyed?

19. Are the powers for inspecting food efficient?

20. Is the coroner of your district also a sanitary officer or a medical practitioner, or originally educated as one?

21. Have the Guardians obtained sanitary reports of their districts, and at what cost?

22. Has registration of *disease* been attempted?

23. What means exist for immediately ascertaining the presence of any epidemic disease in your district? And,

24. Do these means seem to you sufficient?

25. Is the information given respecting the existence of such disease immediately acted on?

26. Is any record made or published of—

(1.) Deaths,
(2.) Disease which does not end in death in any of the public institutions of your district?

27. If you have had any special outbreaks of disease since 1853, explain shortly the nature of the disease, and give the date. Had you any difficulty, legal or otherwise, in meeting those outbreaks?

28. Are there any districts specially affected by fever, diarrhœa, rheumatism, or consumption, or in which cholera specially prevailed during its visitations in this country? If so, is the cause known?

29. Is the public sewerage and drainage of the district generally sufficient; and if not, in what respect is it deficient? Is the subsoil waterlogged; if so, is there power of draining? Can you restrain housebuilding on waterlogged soil, and if so, what depth do you require the water to be from the lowest floor?

30. Explain the mode by which your sewers are ventilated. Are they or the house drains ventilated wholly or in part by rain pipes? Are—

(1.) The sewers,
(2.) The house drains, carefully trapped?

31. In what manner is the sewage disposed of,—by sale of the solid excrement to farmers, gardeners, and others; or by drainage into neighbouring stream, by irrigation with liquid sewage, or how otherwise? Has any change been made in your method; and have any legal or other difficulties been experienced in disposing of the sewage, or in carrying sewers or drains beyond the district, or through private property? If so, state the nature of such difficulties, and how, in your opinion, they may be removed.

32. What amount has been realized by the sale or disposal of the solid or liquid sewage during each of the last three years?

33. Are the houses generally supplied with waterclosets or privies capable of being flushed with water; or with cesspools, ashpits, earth closets, or earth privies? If cesspools or ashpits, are they deodorized, and how?

34. (1) Do the houses generally drain into the public sewers? (2) And if not, what proportion of the houses are still without the requisite means of communication?

35. (1.) In what manner is the district supplied with water? (2.) If from a stream or river, does any drainage run into it above or at the point at which the water for use is drawn? (3.) In case of there being a system of waterworks, is water laid on to each house, and is there a constant supply? (4.) Is the rainfall utilized directly by (1) public reservoirs or (2) tanks or the like in private houses, and is the supply generally sufficient and of good quality?

36. Are there tenements in your district without water supply and needing it, and have the 76th section of the Public Health Act, 1848, and 51st section of the Local Government Act, 1858, been acted upon in correction of such cases; and have they been found sufficient or otherwise.

37. Have any works of water supply or drainage constructed by the local authority been found imperfectly constructed, and insufficient for the purpose for which they were intended. If so, what amount was expended upon them.

38. Have any measures been taken by the local authority to prevent overcrowding in dwellings, and have those measures been successful?

39. What powers (if any) are vested in the local authority for the regulation of streets or buildings, and are those powers sufficient? Do they refer exclusively to buildings constructed after a certain date, or do they affect all buildings? If any such powers are vested in the local authority, do you *practically* exercise any control over houses about to be built in respect of drainage, ventilation, or other sanitary conditions?

40. Have you reason to believe that overcrowding has arisen from the exercise of this control, and that increased cost or scarcity of cottages has resulted therefrom?

41. Have the existing powers for the abatement and removal of nuisances been found sufficient; if not, what further powers are needed.

42. If extensive works have been undertaken and executed by the local board, has there been any marked improvement in the sanitary condition of the population? If so, state the grounds for arriving at this conclusion.

43. Is there any district under a local board or not adjoining your district which might be advantageously combined with it for purposes of local government or sanitary purposes? If so, state the reasons.

44. Have you any suggestions as to what should be the local authority for sanitary matters in rural districts.

45. Has anything been done in your district under the Sewage Utilization Acts, 1865, 1867, Part 1. of Sanitary Act, 1866, or the Sanitary Act, 1868?

46. Have any defects not mentioned in any other answer been brought under your notice, in carrying into execution the existing laws relating to the public health in the district? If so, you are requested to specify such defects.

The Commissioners will feel much obliged if you furnish them with any suggestions you may be able to offer for improving the present state of the law or the constitution of authorities with respect to any of the matters before referred to, or other matters affecting public health in your district.

If nothing has been done under any of the statutes mentioned in question 45, the following questions will probably not apply to your District.

47. What is the amount received by the local authority during each of the last three years on account of loans and repayments for private improvement works?

48. What is the entire expenditure for works of water supply, and what districts (if any) beyond the boundaries of your district are thus supplied? Are the waterworks within the area under the jurisdiction of the local authority?

49. What is the extent of the borrowing powers possessed by the authority, and are they sufficient?

Have any legal or other difficulties been experienced in obtaining loans for the works executed and to be executed?

And has any reluctance been shown by the local authority in borrowing money in consequence of being unable to obtain the same at a low rate of interest?

50. What is the total amount borrowed by the authority since its formation, specifying the amount of each loan, the purpose for which it was raised, and the rate of interest; and stating, also, whether the loan was obtained from the Public Works Loan Commissioners, from a public company, or from private persons?

51. What is the amount which has been paid off in respect of each loan, and how much still remains due?

52. (*a.*) Has a sinking fund been established for repayment of any loans?

(*b.*) What is its present amount, including interest?

(*c.*) On what securities is it invested, and at what rate of interest?

53. Have any works undertaken by the local authority been afterwards abandoned? If so, state why they were abandoned, and the amount of expenditure incurred in respect of them?

54. Has there been much, if any, local opposition to the execution of any public works by the local authority, and if so, to what works, and on what grounds?

55. Have any defects been found in the law with respect to enforcing the execution of private improvement works, and obtaining repayment for the outlay? If so, state the nature of such defects.

C.—Questions for Rural Districts.

1. What is the name of your parish?
2. In what county is it situate?
3. In what union?
4. How many acres does the parish contain?
5. What is the rateable value?
6. (*a.*) The population?

(*b.*) Number of houses in the district by last census? Any remarkable change in their number since 1861?

7. If local rates other than poor rates have been levied, what is the total amount of such rates levied during each of the last three years, for which the accounts have been made up, specifying (1) the total, and (2) the rate in the pound of each of such rates separately? viz.,

(*a*) Highway rates.

(*b*) Other rates, not poor rates, if any, specifying them.

8. What have the poor rates amounted to in each of the same three years? What has been the rate in the pound for each of the three years?

9. What is the total amount of expenditure, and amount of work executed during the same period (viz., each of the last three years), under any or all of the following heads:—

(*a.*) Constructing and repairing sewers and drains.

(*b.*) Constructing streets and road.

(*c.*) Constructing works of water supply.

(*d.*) Law charges.

(*e.*) Other expenses, such as law charges.

10. Has any money been borrowed? If any, how much?

11. What has been the rate of mortality per thousand of the population during each of the last three years?

12. What officers are employed by the guardians and the sewer authority, *i.e.*, the vestry, for any purposes in connexion with matters affecting public health? State the name of each office, and the salary and the duties attached to each? State especially whether there is a nuisance inspector appointed by the guardians? Does the medical officer of the guardians do anything in matters affecting the public health? If you have any factories or workshops, are they inspected?

13. Does the board of guardians or the vestry in any way receive advice and assistance in the discharge of sanitary duties from any medical source?

14. Is there any regular system of inspection of your district for the purpose of ascertaining unhealthiness or the reverse of its several parts? Is a report published?

15. If you have had any special outbreaks of disease since 1853, explain shortly the nature of the disease, and give the date. Had you any difficulty, legal or otherwise, in meeting those outbreaks?

16. Are there any districts specially affected by fever, diarrhœa, rheumatism, or consumption, or in which cholera specially prevailed during its visitations in this country? If so, is the cause known? Are any of these diseases specially prevalent during certain months? If so, give the disease and the months?

17. Is the public sewerage and drainage of the district generally sufficient; and if not, in what respect is it deficient? Is the subsoil waterlogged, if so, is there power of draining? Do the houses drain into the sewers?

18. In what manner is the sewage disposed of,—by sale of the solid excrement to farmers, gardeners, and others; or by drainage into neighbouring stream, by irrigation with liquid sewage, or how otherwise? Has any change been made in your method; and have any legal or other difficulties been experienced in disposing of the sewage, or in carrying sewers or drains beyond the district, or through private property? If so, state the nature of such difficulties, and how, in your opinion, they may be removed.

9. Are the houses generally supplied with privies and ashpits? Are there cesspools? How are they drained? If they are deodorized, how is that operation effected? Have you earth closets or ash closets?

20. (1.) In what manner is the district supplied with water? (2.) If from a stream or river, does any drainage run into it above or at the point at which the water for use is drawn? (3.) In case of there being a system of waterworks, is water laid on to each house, and is there a constant supply? (4.) Is the rainfall utilized directly by (1) public reservoirs or (2) tanks or the like in private houses, and is the supply generally sufficient and of good quality? Is any stream or river liable to pollution from graveyards, as, for instance, by ordinary drains, or drains from vaults discharging into it?

21. Are there cottages or other houses in your district without water supply and needing it?

22. Have any attempts to improve the drainage of houses, &c., in your parish failed from some defect in the law, or any other cause? If so, explain the cause of failure.

23. Are there any crowded clusters of cottages?

24. Have any measures been taken by the guardians or the vestry to prevent overcrowding in dwellings, and have those measures been successful?

25. What powers (if any) are vested in the guardians or the vestry for the regulation of streets or buildings, and are those powers sufficient? Do they refer exclusively to buildings constructed after a certain date, or do they affect all buildings? If any such powers are vested in the local authority, do you *practically* exercise any control over houses about to be built in respect of drainage, ventilation, or other sanitary conditions?

26. Have you reason to believe that overcrowding has arisen from the exercise of this control over cottages, and that increased cost or scarcity of cottages has resulted therefrom?

27. Are there inhabited houses new or old in your district which are unfitted for human occupation, and in what particulars are they deficient?

28. Have the existing powers for the abatement and removal of nuisances been found sufficient; if not, what further powers are needed?

29. If considerable improvements in matters affecting public health have been carried out by the board of guardians or the vestry, has there been any marked improvement in the sanitary condition of the population? If so, state the grounds for arriving at this conclusion. Are the Vaccination Acts attended to?

30. Is there any district adjoining your district which might be advantageously combined with it for purposes of local government or sanitary purposes? If so, state the reasons.

31. Have you any suggestions as to what should be the local authority for sanitary matters in rural districts?

32. Do you think that the police might be employed with advantage as inspectors of nuisances and otherwise in carrying out laws to promote public health?

33. Has anything been done in your district under the Sewage Utilization Acts, 1865, 1867, Part 1. of Sanitary Act, 1866, or the Sanitary Act, 1868? If so, explain anything not above referred to which has been so done.

34. Have any defects not mentioned in any other answer been brought under your notice, in carrying into execution the existing laws relating to the public health in the district? If so, you are requested to specify such defects.

The Commissioners will feel much obliged if you furnish them with any suggestions you may be able to offer for improving the present state of the law or the constitution of authorities with respect to any of the matters before referred to, or other matters affecting public health in your district.

D.—General Questions.

1. Have your answers special reference to the circumstances of any particular counties, or are they to be taken as applicable to all rural districts?

2. By the existing law such matters as drainage, water supply, privy accommodation, &c., are placed under the vestry, while the removal of nuisances, including remedies against infection, overcrowding, &c., is under boards of guardians. If all matters of local government in rural towns and villages are placed under one authority, what authority should you think the best? If one of the above authorities, which? Should a new authority be constituted, what authority would you suggest?

3. It has been suggested, that entire watersheds might be placed under control of conservancy boards intrusted with duties as to (1) pollution of rivers and estuaries and agricultural drainage, especially arterial drainage, and (2) all matters of local government in rural districts, such as drainage, water supply, nuisance removal, provisions against defective ventilation, and improper construction of dwellings. What is your opinion of this suggestion? If conservancy boards are formed, (1) would you give them authority in all matters of local government in rural districts? (2) would you recommend that tributaries be placed under their own boards, either independent of the larger board or subordinate thereto?

4. There are other suggestions, that (1) highway board districts, which are usually petty sessional divisions, or (2) unions, or (3) parishes, might be the unit of area for local governments, groups of highway board districts, or of unions, or of parishes (as the case may be), being formed, if thought desirable. Which of these suggestions should you think in the best direction?

5. Is local rating for sanitary purposes already excessive? How far do you think that the concentration of powers, and consequent simplification, would save expenses and render it possible to reduce the rates?

6. How could rating for any sanitary works be conducted if the areas of authority did not coincide with old rating areas? By distribution, or apportionment, or how otherwise?

7. Could small rural parishes be combined for purposes affecting more than one of them, *e.g.*, water supply, either by tanks, wells, or conduit pipes.

8. Could small country towns and rural parishes, connected or adjoining, be sometimes combined under one local authority for all purposes of sanitary administration?

9. Could unions or highway board districts be sometimes united (1) for large undertakings, *e.g.*, water supply or drainage, (2) all purposes of sanitary administration?

10. Should any such combinations be effected, what will form the most efficient authority for the combined districts?

11. Do you think that rural districts which are rapidly becoming urban present any special difficulties of sanitary administration while passing through that transition state?

12. Can you suggest any improvements in appointment and duties of (1) inspectors of nuisances, (2) surveyors, (3) medical officers in country districts?

13. Is the mode of bringing nuisances before magistrates satisfactory?

14. Do you think that the law should be put in force by a simpler process? If so, can you suggest any?

15. What control over the local authority, by inspection, or power to set in motion an inactive authority, would you give to a central authority, such as the Home Office? Can you suggest any better control than that which now resides in the Home Office?

16. Would county financial boards, if constituted, be a good intermediate authority between local and central authorities, supposing such an intermediate authority were thought desirable?

17. Should you recommend such an intermediate authority, or would you prefer direct relations in all cases between the central and the local authority?

E.—Questions to be addressed to Medical Officers of Health or Registered Medical Practitioners known to be interested in Public Medicine.

I.

You have had opportunities of observing the working of various Acts affecting public health, would you be so good as to state very briefly, α. What these opportunities have been? β. Where? γ. Over what area? δ. In what extent of population?

II.

Can you state, under the following heads, *objections* you may have to Acts bearing on public health;

α. In respect of deficiency of power.

β. In respect of inconvenient modes of exerting power.

γ. In respect of objects which you think should fall within their scope, and do not.

III.

What is your opinion on the following points:

A.

α. The best constitution of *central* authority.

β. Power of *central* authority, whether of originating *ex proprio motu* or on appeal merely.

γ. Points in regard to which the *central* authority should have compulsory powers.

δ. Way in which *central* authority should be set in motion.

B.

α. The best constitution of *local* authority for districts, urban and rural, with which you are acquainted.

β. Points which should be optional with the *local* authority.

IV.

A.

What kind of sanitary inspection you should wish established through the country—

α. By the central authority.

β. By local authority.

B.

α. For what area should you recommend inspectors of the first class (central)?

β. For what area or number of population should you recommend local inspectors?

C.

What duties (engineering, chemical, medical, statistical, forensic) should you assign to inspectors? What powers should they have?

α. Central.

β. Local.

D.

What educational qualification should you recommend for sanitary inspectors or for health officers, either now or at some future period? Should they be debarred from practice, (1) private, (2) in hospitals?

α. Central.

β. Local.

E.

Have you any opinion as to the possible amalgamation or redistribution of the functions discharged by officers connected with public health under the—

1. Local Government Office.
2. Privy Council.
3. Burial Acts, so far as connected with our subject.
4. Lunacy Commissioners.
5. Registration Office.
6. Poor Law Board.
7. Common Lodging House Acts.
8. Artizans' or Labourers' Dwellings; Mines.
9. Factory Acts.
10. Workshops Acts.
11. Adulteration of Food Acts.
12. Markets or Bakehouses, &c.
13. Vaccination Act.
14. Pharmacy Acts.
15. Emigration or Shipping Acts; or,
16. As to the mode of inquiry into cases of death by poisoning, or other mode of death requiring judicial investigation?

V.

How far do you think that the sanitary administration of the country can be combined with the Poor Law Board in suburban and rural districts?

VI.

Will you be so good as to state any matters which, in respect of sanitary organization, you desire to have altered in your district or in districts with which you are acquainted?

VII.

What improvements can you suggest for the better registration of deaths? Do you recommend registration of sickness, (1) for hospitals, dispensaries, workhouses, or (2) from private practitioners.

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